



# Group Dynamics

RESEARCH AND THEORY





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TAVISTOCK PUBLICATIONS, LTD.

London

454, 602, 101  
22/2

293

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<b>Bureau Ednl. Psy. Research</b>	
DAVID H.	ING COLLEGE
<i>Dated</i>	<b>14.3.55</b>
<i>Accs No</i>	<b>570</b>

First published in England, 1954, by  
Tavistock Publications, Ltd.  
2 Beaumont Street, London, W.1

PRINTED IN THE UNITED STATES OF AMERICA



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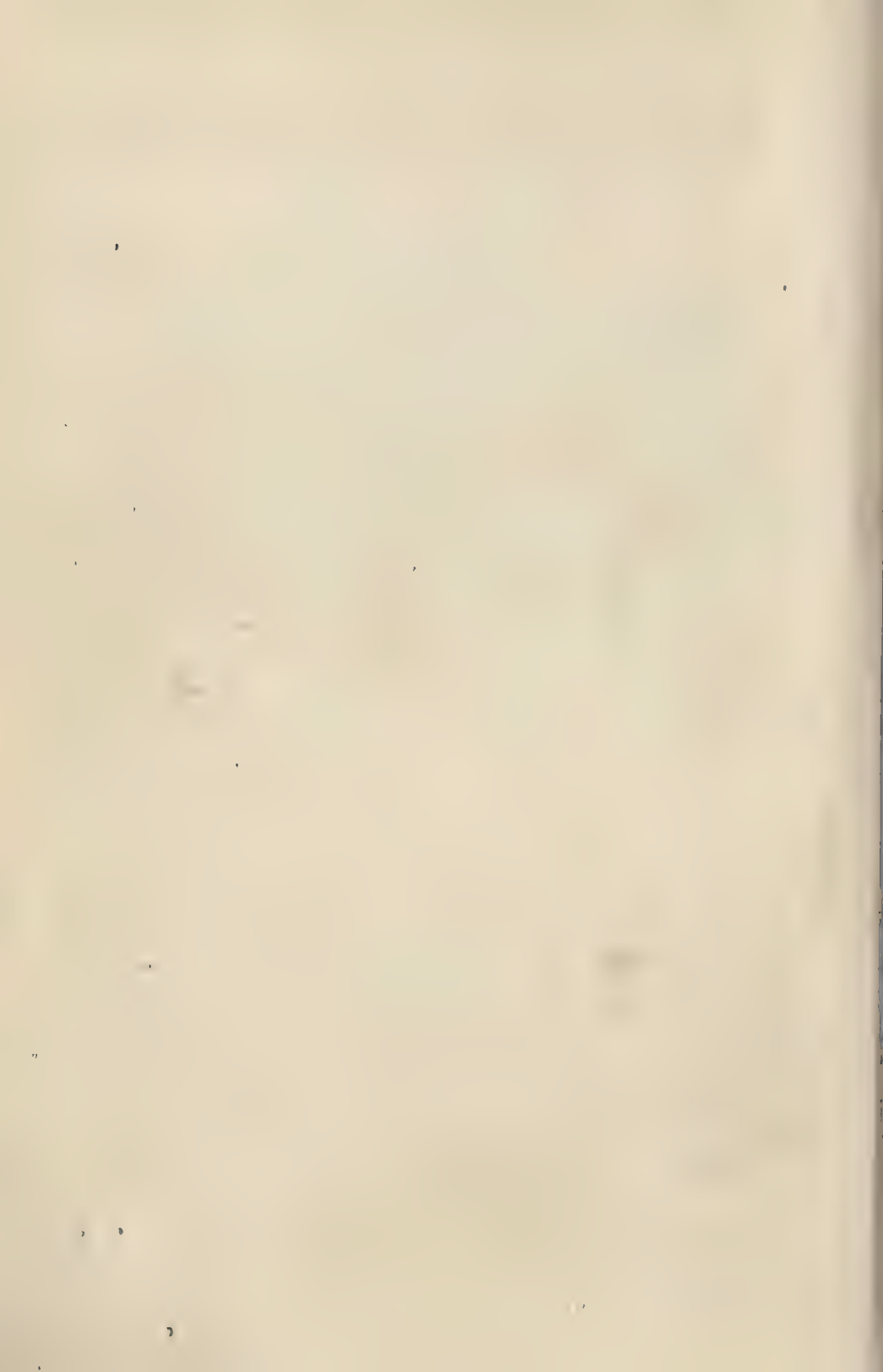


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## Preface

The literature about groups goes back to the distant past. Careful research, however, has been known for only about a quarter of a century. Although man was slow in demanding that his working assumptions about the nature of group life be based upon objective evidence, his curiosity is no longer satisfied with speculation or the accumulated wisdom of personal experience. Today we demand facts. And, although all of us sometimes mistakenly take our untested prejudices to be facts, there is widespread recognition that a fact can be established only through careful use of objective methods of observation, measurement, and experimentation.

The use of such methods to provide a dependable body of knowledge about groups has accelerated rapidly within very recent years. The resources devoted to this end are now immeasurably greater than just a short time ago. Perhaps the most important reason for this development is the simultaneous acceptance of two propositions—that the health of democratic society is dependent upon the effectiveness of its component groups, and that the scientific method can be employed in the task of improving group life.

A democratic society derives its strength from the effective functioning of the multitude of groups which it contains. Its most valuable resources are the groups of people found in its homes, communities, schools, churches, business concerns, union halls, and various branches of government. Now, more than ever before, it is recognized that these smaller units must perform their functions well if the larger system is to work successfully.

Awareness of the practical importance of something does not, however,

lead automatically to its scientific investigation. The recent rise of research in group dynamics could occur only because people began to see that the scientific method can be applied to these important phenomena. Only after social scientists had made some progress in developing research techniques applicable to group life could support be mobilized for a systematic and empirical attack on the functioning of groups. Of critical importance were the development of techniques of observation for recording and classifying behavior and methods of interviewing which would reveal motivation and attitudes, the demonstration that group phenomena can be created experimentally in a laboratory, and the invention of "action-research" with its emphasis upon the possibility of conducting genuine experiments in natural groups.

The demonstration that techniques such as these can provide dependable findings about critical social problems has resulted in a great increase in the financial resources and the number of competent investigators available for research on groups. This research is being conducted by persons trained in several different disciplines and under the auspices of universities and other organizations more directly concerned with the practical problems of group life. The conclusions and theoretical interpretations of all this research are scattered throughout a variety of publications in several professional fields. No statement is available which systematically summarizes the results of these various investigations, nor is there easily at hand a collection of the more significant articles which describe the methods and findings of research on group dynamics. Such a summation is greatly needed by students, research workers, and people charged with the responsibility of dealing practically with groups.

This book was prepared in order to help meet this need. When we decided to undertake the task, two alternative procedures presented themselves. We could try to write a systematic summary of present research findings in a manner similar to the usual textbook, or we could compile a collection of the major publications in order to illustrate the variety of approaches, methods, and findings. The preparation of an integrative summary seemed to us to be premature. To achieve theoretical consistency at the present time, we should have to omit important findings which do not yet fit readily into a single theory and we should have to present large segments of theory for which adequate empirical testing has not yet been provided. The second alternative seemed hardly better, however, for there is in fact a greater systematic relation among various research projects than would be evident from a mere stringing together of research articles.

A middle course seemed best. We have chosen, therefore, a limited number of theoretically defined problems and have grouped the available literature into these areas. As an introduction to each of these sections, we have prepared a chapter giving a theoretical framework for relating the

various articles to one another. In doing so we have sometimes employed terms and concepts not used in the original articles, but we hope that we have not distorted the intended meanings. In each introductory chapter, we have tried to define the scientific nature of the problem and to point out the ways in which research is beginning to "add up" to general principles. At the same time we have attempted to communicate some of the vitality of the field by stressing problems that need further study, by raising questions, and by suggesting tentative hypotheses which may soon be tested. A reader who desires a brief overview of the field of group dynamics will discover that a consecutive reading of the introductory chapters is useful for this purpose.

The book is divided into six sections. The first contains articles, primarily theoretical in intent, which illustrate some of the typical premises and methods used in research on groups. The second section deals with the formation of groups and the development of group cohesiveness. This is followed by a unit containing articles on the nature of group pressures and the operation of group standards. The fourth section is concerned with group goals and the problems inherent in the movement of a group toward its goals. The structure of groups is treated next, and the book is concluded with a section reporting research on leadership. It should be mentioned that many of the articles could well be located in several different sections, since they deal with various phenomena simultaneously. Their present placement reflects our judgment of "best fit," but the reader may wish to consider the same article from different points of view. We have tried, wherever practical, to indicate cross references in the introductory chapter of each section.

It has been necessary, of course, to select a limited number of articles from the total literature. Our decision to present the material in clusters around certain problem areas has resulted in the necessary omission of several important papers, especially pioneering ones which deal with such newly formulated problems that they stand as isolated bridges to unexplored territory. We were especially reluctant to omit the stimulating work done by such persons as Dr. Herbert Thelen and his colleagues, the members of the Tavistock Institute of Human Relations, Dr. William F. Whyte, and numerous people who have conducted research in connection with the National Training Laboratory for Group Development. Within each section we have also had to choose among good articles. With few exceptions, we have included only reports that present empirical findings based upon quantitative research, and when several related articles were available, we attempted to choose the one which best summarized the total set of research. Some of the classics have, accordingly, been left out because more recent publications summarize them as well as provide additional findings.



The audience in mind for this collection is a broad one. We have tried to make the book useful to students in the various social sciences that are concerned with groups. At the same time we have not been unaware of the questions raised by consultants, teachers, and "social engineers." Although this volume does not attempt to tell such people how to apply group dynamics, many of the problems they meet daily are examined in the research reports included here. Experience with persons working in occupations which demand insight into group processes encourages us to believe that the more capable of them are quite prepared to employ theoretical explanations of group events in developing their programs.

Several strong impressions have grown on us while preparing this book. One is that important progress has been made in explaining the nature of the forces at work within a group. Sound research results are available which are beginning to fit together so that they contribute to an integrated conception of group dynamics. We are impressed that empirical, quantitative, and carefully controlled research can be done on groups in both field and laboratory settings, and that many of the findings from studies such as these have important practical value.

We have been struck by the demands made on those who study the dynamics of groups. It is not easy to collect data on an adequate population of groups. It requires time, money, and trained personnel to create and maintain an appropriate laboratory or field setting for research. Much of the work reported in this volume could not have been done without special encouragement and financial support. It is noteworthy that a large proportion of this research has been substantially aided by grants from such organizations as the Office of Naval Research, Rockefeller Foundation, Carnegie Corporation, United States Air Force, Field Foundation, and the National Institute of Mental Health.

This book is the product of the work of many people. We deeply appreciate the kindness of those who have given us permission to include their research reports. Most have also provided special encouragement and helpful advice. We are indebted to our colleagues in the Research Center for Group Dynamics, not only for the additional research and administrative load they assumed while we were working on this assignment, but also for the suggestions, stimulation, and support they provided. We want to thank especially Ronald Lippitt, John R. P. French, Jr., and Leon Festinger.

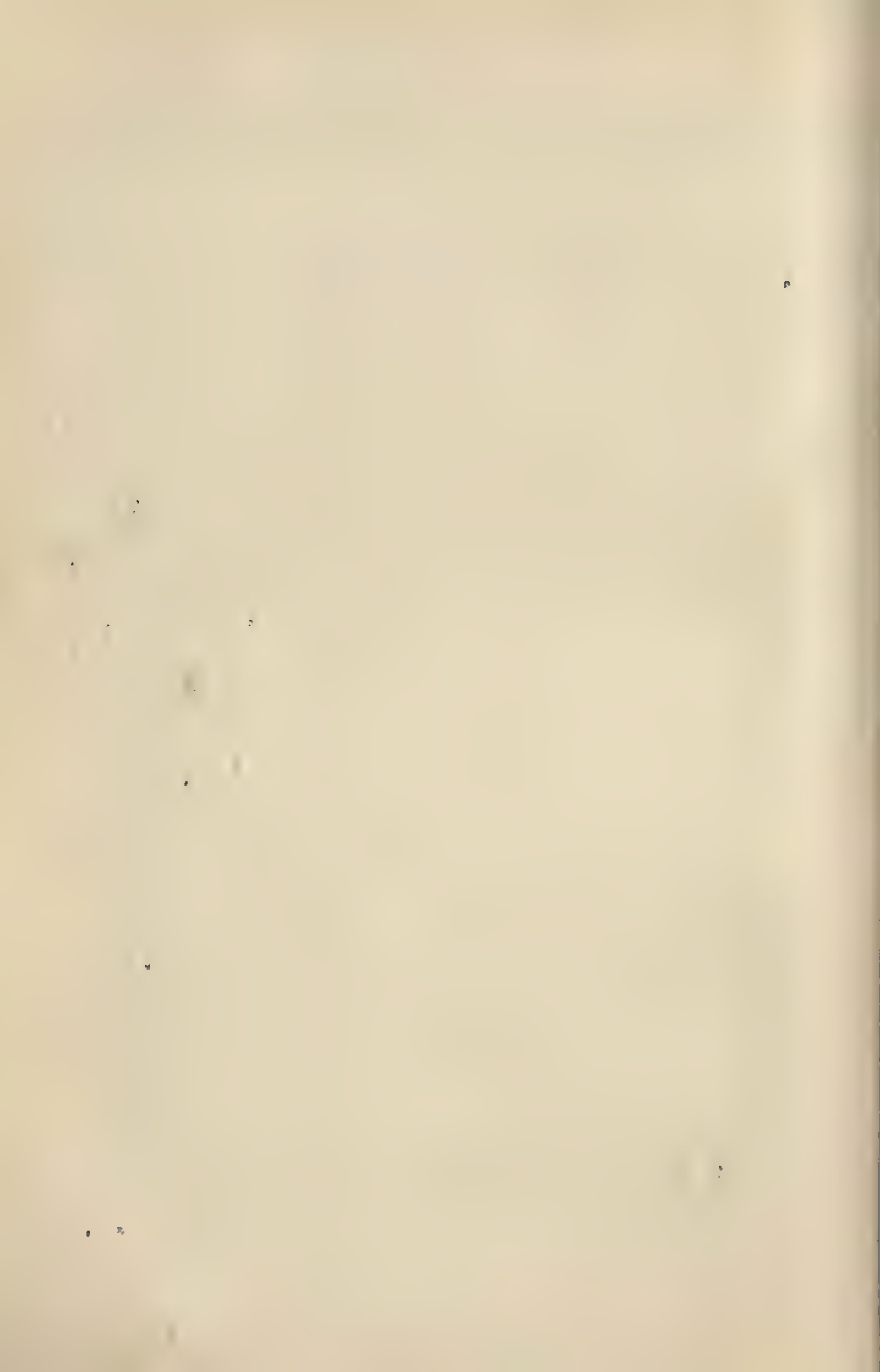
We have received valuable help in the improvement of both our ideas and morale from faculty friends and students at the University of Michigan. Seminars in group dynamics contributed plans, hypotheses, and refinement of concepts which have found their way into introductory chapters. Many notions that we value highly could be traced to informal discussions with Rensis Likert, Angus Campbell, and Theodore Newcomb.

The drawings are the work of Mr. Hirohide Hinomoto. Mrs. Jane Corfield assisted in many of the administrative details of organizing this collection, while Mrs. Julian Morrisette helped in editorial duties, and Miss Constance Carter did much of the typing. We are most grateful to them for their reliable and willing help. Finally, we wish to thank the American Psychological Association, the American Sociological Society, *Human Relations*, and the many other organizations and publishers who have given us permission to include their materials. They are mentioned at appropriate places throughout the volume.

D. C.

A. Z.

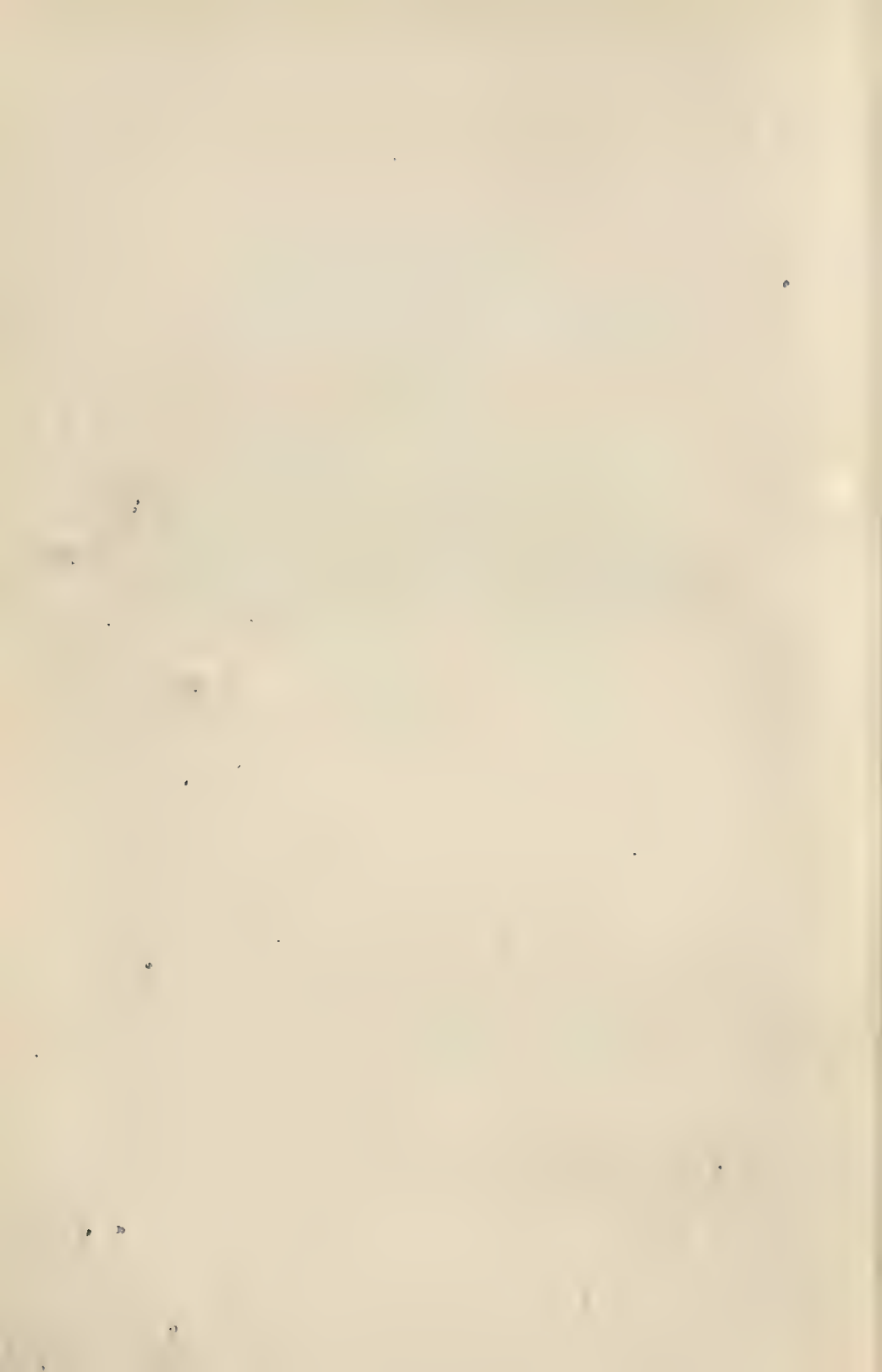
*Ann Arbor, Michigan**January, 1953*





**Part One**

**APPROACHES TO THE STUDY OF GROUPS**



# 1

## Approaches to the Study of Groups: Introduction

If it were possible for the overworked hypothetical man from Mars to take a fresh view of the people of Earth, he would probably be impressed by the amount of time they spend doing things together in groups. He would note that most people cluster into relatively small groups, with the members residing together in the same dwelling, satisfying their basic biological needs within the group, depending upon the same source for economic support, rearing children, and mutually caring for the health of one another. He would observe that the education and socialization of children tend to occur in other, usually larger, groups in churches, schools, or other social institutions. He would see that much of the work of the world is carried out by people who perform their activities in close interdependence within relatively enduring associations. He would perhaps be saddened to find groups of men engaged in warfare, gaining courage and morale from pride in their unit and a knowledge that they can depend upon their buddies. He might be gladdened to see groups of people enjoying themselves in recreations and sports of various kinds. Finally he might be puzzled why so many people spend so much time in little groups talking, planning, and being "in conference." Surely he would conclude that if he wanted to understand much about what is happening on Earth he would have to examine rather carefully the ways in which groups form, function, and dissolve.

Now if we turn to a more customary perspective and view our society through the eyes of Earth's inhabitants, we discover that the functioning or malfunctioning of groups is recognized increasingly as one of society's major problems. In business, government, and the military, there is great interest in improving the productivity of groups. Many are alarmed by the apparent weakening and disintegration of the family. Educators are coming to believe that they cannot carry out their responsibilities fully unless they understand better how the classroom functions as a social group. Those concerned with social welfare are diligently seeking ways to reduce intergroup conflicts between labor and management and among religious and ethnic groups. The operation of juvenile gangs is a most troublesome obstacle in attempts to prevent crime. It is becoming clear that much



mental illness derives in some way from the individual's relations with groups and that groups may be used effectively in mental therapy.

All of these phenomena and the social problems related to the functioning of groups are of legitimate interest to the student of "group dynamics." This branch of social science has developed in response to the need for a comprehensive and systematic understanding of the nature of group functioning. Its ultimate goal is the discovery of general laws about the determinants of various properties of groups. Those working toward this goal seek to find valid generalizations that can be shown to hold for a great variety of groups in widely different social settings. If they are successful, they may enjoy a double satisfaction—that derived from solving a scientific puzzle and that provided by contributing to the more rational solution of the practical problems of society.

### **Different Ways of Studying Groups**

In this book we are considering what has been learned thus far in the endeavor to understand the bases of group life. As one studies the various writings about groups, one is impressed with the multitude of different ways in which problems have been stated, the great variety of research methods that have been employed, and the confusion of tongues in describing what happens in groups. A first reaction might well be to become disheartened by the apparent chaos and disagreement. A more careful study of the field will reveal, however, that many of the apparently competing "theories" and "explanations" do not actually contradict but rather augment and amplify one another. This is not to say that all conflicts are only illusory; genuine differences of opinion and approach do exist. As might be expected in any young field of investigation, basic problems of research and theory remain unsolved and different people are trying out different solutions to them.

In order to benefit fully from the work that has already been done and to build constructively upon it, we must be able to see through the conflicts that are only apparent and to recognize the real issues. The task with respect to the apparent conflicts is to recognize the origin of the appearance of diversity and contradiction and to seek remedies for the misunderstandings. The remaining real issues can only be settled through the persistent application of scientific methods of problem solving.

### ***Some Sources of Apparent Conflicts***

Perhaps the most important source of confusion in the literature on group dynamics lies in the fact that different investigators have concentrated their research and thinking on a limited segment of the total array

of groups that exist. One, for instance, may draw out a theory of groups from his work with children in classes. Another may rely mainly on his experience in highly formalized groups in the military. Yet another theorizes from results obtained solely from temporary groups constructed in the laboratory. Many apparent contradictions can be reconciled if care is taken to determine what empirical limits should be imposed upon any given generalization.

• Closely related to this first source of diversity in the approaches to the study of groups is the great heterogeneity of social problems that have motivated research. One investigator is motivated to find ways to improve group efficiency. Another wants to reduce intergroup conflicts. And another sees the group as a medium for changing attitudes and behavior. These social concerns which motivate research tend to bring certain variables to the fore in the proposed conclusions and generalizations drawn from any given investigation. Again it should be noted that these different "findings" actually should supplement each other in any comprehensive theory. They are contradictory only when proposed as complete answers or "the full story."

Finally research on groups is conducted by people coming from several different branches of social science and reflecting special theoretical orientations within these disciplines. Some of the more obvious disparities of terminology when dealing with the same phenomena derive from the special languages that are brought to the study of groups. It may be expected that these purely semantic problems will be solved as research techniques become standardized and interdisciplinary work proceeds.

### *Genuine Differences Among Approaches*

Any attempt to formulate an empirically based theory of group functioning must provide at least tentative answers to certain fundamental questions. Many of the genuine differences among the various approaches to the study of groups lie in the different ways people try to answer these questions. We suggest three: (a) What is the proper relation between data collection and theory building? (b) What are the basic variables that determine the properties of groups? (c) What are the proper objects of study and techniques of observation? Any approach to the study of groups will be better understood if one recognizes how that approach attempts to answer these three questions.

*Data collection and theory building.* The genetic development of any science seems to work progressively toward a satisfactory answer to the question of how data collection and theory building should be related. It appears that all the sciences have stemmed initially from armchair speculation; most can be traced back to a definite tradition in philosophy.

For each developed science it can be said that at some point in history some people became dissatisfied with speculation and undertook to observe carefully and objectively the phenomena in question. Often the rebellion against speculation created an extreme position that ignored theory and let the data "speak for themselves." Finally, as a branch of science became more mature, theory building and data collection assumed a more interdependent relation to each other. In its advanced stage the scientific enterprise consists of (a) developing hypotheses and theories from observations, (b) checking these theoretical formulations by new observations and experiments, (c) revising the hypotheses, (d) checking these new hypotheses in new experiments, and so on over and over again. In the process more and more comprehensive theoretical systems emerge, each part of which has a firm empirical basis.

Research and theory in the field of group dynamics illustrate this progressive trend quite well. Until about twenty-five years ago the study of groups was in the speculative era. Comprehensive and creative systems were spun out by thinkers of real ability. Simmel, Cooley, Giddings, and G. H. Mead represent the more impressive of the theorists in this speculative era. Since the 1920's the empiricist rebellion has been under way. In this phase there has been a large number of "fact finding" studies. Rather simple empirical questions have usually guided this type of data collection: Are groups better than individuals in solving problems? What is the size of the most commonly found informal group? Does group solidarity lead to greater group productivity? In this empirical era great strides have been made in the techniques of observation and data collection. Problems of reliability and quantification have come to the fore. The major accomplishments of this period have been the accumulation of some dependable "facts" and the refinement of data collection.

Research in group dynamics has entered progressively into the third stage of development during the past decade or two. More and more of the research being undertaken is motivated by an interest in testing hypotheses that are "derived" from a larger body of theory. There do remain genuine disagreements among those working in this third stage about the exact way in which testable hypotheses should be constructed. There are those who believe that we should not leave the empiricist era too rapidly for fear that premature theorizing will get research into blind alleys. In sharp contrast are those who feel that most of the data collection to date has been inefficient because so little of it can be added up to a comprehensive formulation. There is strong interest in conceptual "models" among this group.

In selecting material for this book, the editors have included only publications that reflect the third stage of development. Strictly theoretical formulations have been omitted unless they have clear relations to an



actual program of research or lend themselves readily to empirical testing. At the same time research findings have also been excluded which have no clear relation to any explicit theoretical conceptualization. A middle ground has been taken in regard to the current issue of how formalized theoretical systems should be in present-day work. At this stage of scientific development it appears that too much emphasis upon formal rigor in theorizing results in a too narrow range of empirical relevance. Successful research must strike a productive balance between raw empiricism and rigorous formalism.

*The basic variables of group dynamics.* Probably the most troublesome obstacle to the establishment of a generally acceptable theory of group dynamics lies in the great disagreements that now exist concerning the basic variables, concepts, or "facts" with which laws will deal. Different observers may all watch the same group discussion, let us say, and yet come out with widely different descriptions of what happened. One will present a frequency distribution of the interactions for each of a set of categories of interaction. Another will show how the subgroup formation shifted from time to time. Yet another will describe the emotional atmosphere set by the leader and how the emotional quality of the group steered the course of the discussion. If it were clear that all these different descriptions were actually pointing to different phenomena, there would be no insurmountable difficulty. The basic task would then be to determine how each of these aspects relates to the others both conceptually and empirically. But unfortunately it is not clear to what degree these different descriptions are different ways of talking about exactly the same things.

The essential problem may be posed in this way. The basic laws of group dynamics toward which all investigators in the field are working are to be stated in terms of functional relations of the type:  $x = f(y)$ ;  $x$  is a certain function of  $y$ . How are we to select and name the  $x$ 's and the  $y$ 's in our research? Cattell poses this problem neatly in Chapter 2 when he asks what differences there are between the concept of "group cohesiveness" as used by Festinger and the concept of "group potency" as employed by Hemphill. A candid answer to this question must be that at the present time no one knows. This is not to say that, in principle, an answer cannot be given, but it does stress one of the major problems confronting research and theory in group dynamics today.

In working toward a solution of this problem it is well to keep separate two of its aspects that are rather different. One part of the problem is to isolate the actual unitary variables or dimensions that make discernible differences. The other part of the problem consists of giving these variables appropriate names and conceptual properties. The solution of the first aspect of the problem may be expected as a result of empirical work which determines what regularities are invariably found among opera-

tionally defined measures. Factor analysis and other methods for determining invariant empirical associations can ultimately give answers to this question.

The problem of achieving a common language of concepts that will permit the ordering of the variables into a coherent conceptual system is more difficult. If the variables are to be employed in a conceptual system in such a way that derivations can be made to new empirical data and relations, then their conceptual properties must be clearly specified. These properties indicate the place of each variable in the conceptual system and the kinds of logical or mathematical operations that may be performed upon it. Thus the concept "psychological force" which may be used to describe certain behavioral tendencies has the conceptual properties of a vector. It is these properties that determine how this concept may be combined with others in a total theoretical system. Despite the importance of conceptual systems and models, at the present time there is no single language that all theorists will agree upon. Furthermore there is little prospect that such a language will soon emerge.

Fortunately the conceptual systems that are currently in use are not completely incompatible with one another. In a certain general sense those who employ one set of terms can "understand" those who employ another, even though a dictionary of translations has not been worked out. This possibility of sensing when two differently oriented theorists are talking about essentially the same thing provides the way in which a generally agreed upon set of terms can be achieved. When two theorists can agree that they are talking sufficiently about the same thing so that the same operational definition can be given to the differing term of each, then a rigorous translation can be made between the two languages and eventually the two will become amalgamated into one.

In organizing the materials for this book the editors have attempted to employ one more or less consistent language in the introductions to each topic area, even though many of the projects were initially conceived and carried out in a rather different conceptual system. It is hoped that this procedure will reveal systematic relations among the various research projects even though the original author might express the significance of his work in somewhat different terms.

*Objects of study and techniques of observation.* It should be apparent that the way a person attempts to solve the problem of data collection and theory building will greatly influence his selection of specific phenomena for investigation and his methods of research. Thus, for example, the investigator who believes that rigorous theorizing is dangerous at the present stage of development may prefer broad exploratory field investigations in order to gain a more intuitive grasp of the variables with which subsequent theorizing should deal. On the other hand, an investigator

who wants to test some restricted hypothesis derived from a theory or conceptual model may desire to conduct a rigidly controlled experiment in which some limited variable is varied systematically. The same investigator may choose one method in one study and quite a different one in another, depending upon his judgment of how well developed a given theoretical area is. (The program of research upon communication and pressures to uniformity described by Festinger in Chapter 15 illustrates how methods of research may vary as theories are progressively refined.)

Some investigators believe that such methodological problems as those of developing measuring instruments and of demonstrating their reliability should come before much theorizing. Thus Cattell (see Chap. 2) maintains that the basic dimensions of groups should be revealed through the factor analysis of a vast sample of reliable measurements of group phenomena. The sociometrists, too (see Chap. 6), have tended to concentrate upon the development of the sociometric test before building a more elaborate theory of group structure. And the interactionists (see Chap. 3), such as Bales and Chapple, have devoted great energy to creating standardized systems for recording and categorizing various kinds of interaction on the assumption that theorizing will develop more rapidly as a body of standardized "facts" is developed.

A rather different view is advocated by other investigators who prefer to let theory exert a more guiding influence in the design of research. According to this second view one cannot select devices for recording and measurement before knowing what it is that should be studied. Until variables have been defined conceptually, these investigators hold, one has no real basis for deciding whether to use an interaction chronograph, a sociometric test, a personality test, a certain questionnaire, or some other device.

If we take a view of science like that advocated above, in which theorizing and data collection mutually contribute to our understanding by a process of approximation, the conflict between these two views does not seem irreconcilable. The collection of standardized "data" can help formulate theory provided that the data are not collected just because the standardized instrument is available. Similarly each new formulation of a hypothesis may call for a refinement or revision of the data-gathering instruments.

It should be so obvious as not to warrant much discussion that the basic variables one chooses for his theory will greatly influence the phenomena he observes and the kind of measuring instrument he employs. If one believes, as Bales does, that the basic data of all social science is the interactions among people, he will focus his attention upon interactions and will devise instruments to record and measure them. If one conceives, as Jennings does, of *choosing* as the fundamental bond of groups, one will



make major use of the sociometric test. It can hardly be doubted that a comprehensive theory of group dynamics will have a place for a great variety of variables and consequently will call for the use of many different kinds of data collection. It will be noted in the subsequent chapters that a great variety of research methods have made important contributions to our understanding of the nature and functioning of groups.

### Overview of Different Theoretical Orientations

In order to illustrate concretely how these broad theoretical problems influence the way investigators go about the study of groups, we have selected for inclusion in this section five papers written by theorists who display rather different approaches. Needless to say, these five selections do not reflect all the varieties of approaches that exist, nor should any one of them be taken as a typical "representative" of a school of thought. The major function they should perform here is to broaden our perspective so that we keep constantly in mind the provisional character of any findings or conclusions advanced by a single investigator. It will be noted that we have not included in this section any writing reflecting the field theoretical approach developed by Lewin. The introductory discussions that precede each major section of this book have been written largely within this frame of reference and may be referred to for comparison with the approaches developed in this section.

Cattell outlines in Chapter 2 an approach to the study of groups that relies heavily upon the empirical determination of the major dimensions of groups through techniques of factor analysis. He holds that the descriptive data employed in such analyses should be of three basic types: (a) characteristics of individuals in the population under study which are brought by them into any group and which may be stated in terms of means or other statistical parameters; (b) structural characteristics of the group which are descriptions of the internal behavior of the group, such as status gradients or role relations; and (c) syntality variables which represent the performances of the group acting as a whole. Although the basic dimensions of groups have not yet been completely determined, he points out the conceptual similarity between the personality of an individual and the syntality of a group. He thus believes there will be great value in concepts designed to describe the organismic aspects of group functioning having to do with energy and ability. Finally he illustrates the usefulness of this broad conception in dealing with the problem of leadership. Much of this approach is highly original and can at present be illustrated primarily through research done by himself and his associates. These projects are listed at the end of Chapter 2.

A rather different orientation, stressing the basic concepts of action, in-



teraction, and situation, is presented by Bales in Chapter 3. His conviction, that the overt behavior of human organisms in interaction is the "ultimate stuff" which the students of groups must observe, is shared by Homans (7) in his extended development of a theory of the "human group," by Chapple (3) in the work making use of his interaction chronograph, by Whyte (12, 13) in various studies of formal and informal groups, by Arensberg (1), and others. As most of these writers develop the theory, the interactions among a given set of individuals come over time to form an interdependent system. This system, as Bales indicates, acquires such properties as stratification of status positions, differentiation in respect to the degree of control each person has over others, and differentiation in the access each individual has to resources. Most of these theorists also conceive of this system of interaction as being situated in an environment which provides resources to the group and presents it with problems and disruptions. Much of the research conducted within this orientation is devoted to studying how the internal system of the group develops and how it is modified by various events in the external situation. Although Bales develops his theory with particular reference to the problems of recording and measuring interaction in small discussion groups, the general interactionist orientation has guided the research of many investigators in a very great variety of social settings.

The approach developed by Stogdill in Chapter 4 has provided the major orientation for a program of research conducted over a period of years by the Ohio State Leadership Studies staff under the direction of C. L. Shartle. This program has set for itself the objective of better understanding the nature of leadership in formal organizations. One of its central theoretical concerns has been, therefore, to develop a satisfactory conception of organization. As outlined by Stogdill, a group may be said to be *organized* when members have differentiated responsibilities in relation to common goals. In the study of organizations, this approach concentrates upon determining the distribution of responsibilities (i.e., for what duties and to what people is each member accountable) and the formalized expectations regarding interaction (who is supposed to work with whom). These formalized aspects of organization are then usually compared, in any given setting, with observations of the actual, or informal, patterns of activity and interaction. Leadership, according to this view, is the "process of influencing the activities of an organized group in its efforts toward goal setting and achievement." It is further conceived that the amount of such influence that any given individual possesses will depend upon his position in the organized system of responsibilities and upon other situational variables (as Hemphill [6] has proposed). The techniques of research developed in this program ingeniously combine observations of interactions and other near-sociometric devices with descriptions of

formal organizational structure (see especially articles by Shartle [9] and Stogdill and Shartle [11]).

In sharp contrast to the more sociological emphases of the approaches thus far considered is the psychoanalytic orientation summarized by Scheidlinger in Chapter 5. Stemming from the classical work of Freud (5), this approach stresses the motivational and emotional aspects of the individuals who make up groups. In discussing the problem of leadership, for example, Scheidlinger is not so much concerned about the leader's influence or skill in reaching group goals as he is with the emotions of dependence and hostility engendered in followers.

In the psychoanalytic conception, the individual's earliest experiences in groups, chiefly the family, basically predispose his behavior and feelings in groups for the rest of his life. Thus each individual carries with him an "internalized family" which greatly influences how he reacts to the leader (father) and to other group members (siblings). These influences are conceived of as operating unconsciously, and much of psychoanalytic group work consists of having the analyst interpret to the members just how these unconscious mechanisms determine behavior in the group. Of particular importance for a general theory of group dynamics is the Freudian theory that group cohesiveness arises through common identifications of the members with one another. As might be expected, the psychoanalytic approach has focussed chiefly upon the consequences of group processes for emotional adjustment and upon the use of groups for therapeutic purposes. The work of Slavson (10), Redl (8), Bion (2), and Enziel (4) is outstanding within this orientation.

Finally, in Chapter 6 Jennings summarizes the major types of research that have been conducted within the sociometric approach initiated by Moreno. In this conception the free and spontaneous affective choices of one person for another provide the basic bonds of groups. It is recognized, however, that some groupings (sociogroups) are imposed by society and do not necessarily reflect the more natural groups (psychogroups) which spontaneously emerge from likes and dislikes. More effective and more satisfying groups can be formed, it is held, by shaping institutionalized groups along the lines indicated by spontaneous choice. The sociometric test, which was devised by Moreno originally as a technique for studying the interpersonal choices among children in a classroom, has since been employed by many investigators in a great variety of social institutions. Modified in various ways, it has been used, for example, to describe informal structures in business organizations, cliques and cleavages in communities, and to show how such variables as sex and race come in the development of the child to influence his friendship choices. Certain facets of the problem of leadership have been explored by studying the characteristics of people who receive a large portion of the choices

made within the group. Recently the choices revealed by the test have been recorded in matrices so that the structure of the choices for a total group can be handled systematically. At the end of Chapter 6 are listed some of the major studies within the sociometric orientation.

In reading the theoretical work of these different authors, it will become apparent that they have much in common. Although considerably different concepts are used by different theorists, a careful reader will find many similarities among them. Of course, genuine differences do exist, and one can find real differences of opinion. It is important to recognize, however, that regardless of the "ultimate truth" of these various theoretical orientations, all are serving as guides to vigorous programs of empirical research. It is this research that will provide the major correctives wherever deficiencies or errors exist.

#### REFERENCES

1. Arensberg, C. M. Behavior and organization: Industrial studies. In Rohrer, J. H., & Sherif, M. (Eds.), *Social psychology at the crossroads*. New York: Harper, 1951.
2. Bion, W. R. Experience in groups, I-VI. *Human Relations*, 1948-1950; **1**, 314-320, 487-496; **2**, 13-22, 295-303; **3**, 3-14, 395-402.
3. Chapple, E. D. Measuring human relations: An introduction to the study of interaction of individuals. *Genetic Psychology Monographs*, 1940, **22**, 3-147.
4. Ezriel, H. A psychoanalytic approach to group treatment. *British Journal of Medical Psychology*, 1950, **23**, 59-74.
5. Freud, S. *Group psychology and the analysis of the ego*. London: Hogarth, 1922.
6. Hemphill, J. K. Situational factors in leadership. *Ohio State University Bureau of Educational Research Monographs*, 1949, No. 32.
7. Homans, G. C. *The human group*. New York: Harcourt Brace & Co., 1950.
8. Redl, F. Group emotion and leadership. *Psychiatry*, 1942, **5**, 573-596.
9. Shartle, C. L. Leadership and executive performance. *Personnel*, 1949, **25**, 370-380.
10. Slavson, S. R. *Analytic group psychotherapy*. New York: Columbia Univ. Press, 1950.
11. Stogdill, R. M., & Shartle, C. L. Methods for determining patterns of leadership behavior in relation to organization structure and objectives. *Journal of Applied Psychology*, 1948, **32**, 286-291.
12. Whyte, W. F. *Street corner society*. Chicago: Univ. of Chicago Press, 1943.
13. Whyte, W. F. Small groups and large organizations. In Rohrer, J. H., & Sherif, M. (Eds.), *Social psychology at the crossroads*. New York: Harper, 1951.

## New Concepts for Measuring Leadership, in Terms of Group Syntality

Raymond B. Cattell

The present article is an attempt to reach firm ground, in terms of generally applicable concepts of group psychology, beneath the shifting sands of expediency which so far seem to have motivated and "ordered" most practical measurements of leadership. Primarily we shall ask both what leadership *is*, i.e., by what evidence we know that leadership exists, and *how* leadership is to be measured. Discussion of the problem of measurement at the same time as the problem of meaning is justified by the history of research, which shows that nothing so surely compels precision and realism of conceptualization as the demand for measurement operations.

It is easy to see that in general the existence of the leader is detectable both from the internal organization of the group (i.e., from observations on process and interaction) and from the effectiveness of total performance of the group. For all that goes under the heading of internal organization, i.e., the relationships extracted from the immediate observations of interactional behavior, I shall use throughout this article, as elsewhere (2), the single term "structure." For the parallel abstraction from observations on the final performance of the group *as a group*, I have already suggested and used in a number of studies (3, 5, 6, 10) the term "syntality."

### Panels of Group Description: Population, Structure, Syntality

The concept of the three panels of group description: population, structure, and syntality, has been put forward in an attempt to develop those taxonomic foundations for the discussion of group phenomena which have been so unfortunately neglected by psychologists and sociologists. Until we can describe a group (or its characteristics) exactly, it is not possible to make meaningful measurements upon it or true statements



concerning comparison of the group at different stages of its development. Thus a large fraction of existing experimental results, not having been preceded by an adequate taxonomic study, are likely to remain uninterpretable and noncomparable.

If research on group phenomena is to be strategically planned, it should, in the opinion of the present writer, set out to profit by knowledge of the mistakes of maldirection which occurred at equivalent stages of individual psychology. This means deliberately planning to clarify description and measurement before launching anything but reconnoitering studies on developmental and dynamic problems. The value and need of such a basic coordination of description and measurement devices can be illustrated from almost any recent study in social psychology. Most researches are concerned to relate some special variable, such as a leadership, a communication process or a population characteristic to characteristics or dimensions of the total group. For example, if we take one of the interesting and clear cut hypotheses of Festinger and his co-workers (12) we find the statement (Hyp. 1C) that "the pressure on members to communicate to others in the group concerning Item X increases monotonically with increase of the cohesiveness of the group." The implication here is that "cohesiveness" is a dimension,<sup>1</sup> or at least a variable, of major importance in the description and measurement of a group.

Again, we may take a statement of Hemphill (15) that "the higher the potency of the group, the more the individual is likely to lose his self-respect if the group should fail." So far the relations among these operationally defined variables for group description, such as potency and cohesiveness, have not been worked out as between one study and another or even as between variables in one and the same study. Thus it is not clear whether Festinger's cohesiveness is the same as Hemphill's participation, or potency or viscosity.

The independence of mind which characterizes most scientific workers may incline some of them to say that scientifically it does not matter whether the group attributes employed in any one study correspond to those in another or whether they are "important" so long as they are operationally defined for reproducibility. But since science is a collective undertaking in which one man's research must build upon another's, it is

<sup>1</sup> The distinction which I think would clarify much discussion on variables and dimensions, and which I shall attempt to follow accurately here, is that a *variable* is any arbitrarily defined measurement on a linear continuum, whereas a *dimension* is a special kind of variable or combination of variables. Principally a dimension differs from a variable in that it is known to be independent of other dimensions. This after all, is the time honored usage of dimension. It implies that a dimension is usually the result of factor analyzing a wide array of variables though the independence in a set of dimensions could be established also by other means. In addition, dimensions will be less numerous, more important, and more nearly corresponding to functional unities of theoretical interest, i.e., to what Thurstone calls unitary traits.

important that the same attribute should be repeatedly examined, especially if the theories of different researchers are to be brought into relation. It is also desirable that a minimum number of uncorrelated attributes be employed in any one research. For there is no point in treating as independent variables a set of defined attributes which turn out to be independent only in the mind of their designer. This is an argument for shifting from variables to dimensions in describing groups and, furthermore, for shifting to *common*, agreed dimensions. However there still remains a further difference between the approaches of some investigators using dimensions and the factor analytic approach, namely, that between *defining* a dimension and *discovering* a dimension. An arbitrary a priori definition may or may not correspond to any functional unity in the material. It may prove to be a composite of characteristics never really found together under the sun. It would, indeed, be easy in the existing literature to point to concepts which the authors precisely defined by three or four operations where the latter in fact do not positively correlate, let alone form part of a single factor.

At this point, therefore, the argument develops that it is desirable to choose the attributes by which groups should be described through the agency of factorization, applied to a large variety of commonly used attributes (measured variables), and guided by simple structure and other artistic techniques directed to insuring that the dimensions correspond to functional unities in the behavior. That is to say, one would measure a large number of groups on a large number of attributes, intercorrelate the attributes and determine a decidedly more limited number of independent dimensions by which any particular group in a given population of groups could be most economically and functionally defined.

For the abstract entity which is measured by these dimensions, I have suggested the term *syntality*. It defines for the group precisely what personality does for the individual. It is, therefore, that which determines the organism's reactions when the stimulus situation is defined. The formula which expresses this possibility of prediction is of the general class:

$$R = f(O, S)$$

where  $R$  is the reaction,  $O$  defines the organism and  $S$  the stimulus situation in which the organism, in this case the group, is placed. Syntality traits, like personality traits, are on the one hand an abstraction from behavior, corresponding to some implied structure in the organism, and on the other, the basis by which behavior is again predicted when a stimulus situation is known.

In more detail the above equation can be expressed by the factorial specification equation:

$$R_{ij} = s_{j1}F_{1i} + s_{j2}F_{2i} + \dots + s_{jn}F_{ni} + s_jF_{ji}$$

where the  $s$ 's are the loadings or "situational indices" found by analysis, which are the same for all organisms but characteristic for each situation. The  $F$ 's are the various syntal dimensions or factors which are defined in the same way for all organisms but which have quantitative values peculiar to each particular group organism. Thus  $F_{2i}$  is the extent to which the group  $i$  possesses the dimension  $F_2$ . To repeat: the  $s$  values are peculiar to the stimulus situations in which the performance or reaction  $R$  occurs, and the  $F$  values are peculiar to the particular group organism.

At this point we shall not enter into any philosophical debate as to whether a group can be called an organism. The two main arguments for so considering it are: (a) that though its acts proceed *through* individuals, a good deal of its behavior—that which enters into syntality especially—represents the reaction of the group *as a whole* and (b) it preserves the identity of its characteristics through time. The extent of preservation of identity of behavior pattern can be demonstrated by reliability coefficients. Studies already exist (3, 6, 13) which show that large traditional groups, as well as small experimental groups, do preserve positive, and reasonably high, consistency and reliability coefficients. Thus syntality, like personality, despite certain trend changes and function fluctuation, preserves relatively fixed measures (midpoints in a fluctuation range) peculiar to each individual organism.

As to the actual dimensions by which syntality may be defined, we have as yet only the beginnings of that large scale research which will be necessary to answer the question. There is some moderately satisfactory evidence concerning 12 dimensions of national culture pattern (6) and there is also some evidence on the dimensions of syntality in small groups of men in experimental situations (3, 13, 19). These dimensions have been explored at the level of verbal symbolism by Hemphill (16), with a resulting logical analysis into about 14 dimensions, some of which, however, have not been found to be independent in correlational studies. There is also some evidence at the objective test level (for groups of size 5 to 15 membership), in Wispe's study (5) on 21 groups of women and on the population of 80 groups by Cattell and Stice, which has not yet been published. The two last studies seem to indicate that there is, for example, a factor of general ability among groups very similar to the factor of general ability in individuals, such that the groups which do best on one type of intellectual performance, such as solving cryptograms, also do well on others such as arithmetical computation. There are also three distinct factors of morale, the first apparently being what we shall later describe theoretically under the concept of synergy, the second being a kind of doggedness in difficult and panic creating situations, and the third a morale concerned with morality and honesty, particularly in dealings with other groups and with the group's members. These are cited only as ten-



tative examples of the dimensions in which the syntality of groups will ultimately prove to be measurable.

With this brief illustration of the concept of syntality we may now proceed to define the three panels of observation: population, structure, and syntality. These three panels exhaust all the kinds of observation, i.e., all the data, measurable or qualitative, which can be collected with regard to a group as the reference point. The first panel is quite simple: population variables or dimensions are merely *means (or other statistical parameters) of the measured characteristics of the component individuals*, such as the mean I.Q., mean stature, etc., of the component members. These are clearly distinct from the characteristics of the group *as a group*, which arise by interaction, for they can be measured in the individuals before they become a group. By structural variables or dimensions we mean the descriptions of the internal behavior of the group, such as the status gradients, the clique relations as revealed by sociometry, the reciprocal role relations, the form of leadership structure, and, in organized groups, what Stogdill has called "the sociometry of working relations in formal organizations" (20). These are inferred from observations on the internal interactions, processes and procedures of the group and they are often quite high level abstractions involving such complex concepts as status and leadership structure. The third category comprises the true syntality variables, which represent the *performances of the group acting as a whole and commonly through its executive*, e.g., its decision in a committee-like situation, its constructive performance on a building task or its acts of aggression or assistance towards other groups.

The only difficulties so far found with these three panels lies (a) in finding a place among them for the concept of cultural tradition and (b) in distinguishing sufficiently sharply between structural and syntality variables. In regard to the first it must be said that the culture pattern lies in all three panels: it exists in the personality of the individuals and therefore in the mean population characteristics, it expresses itself in the structure adopted by the group and therefore ultimately in the group behavior, i.e., in the group syntality. Thus the culture pattern is a different order of abstraction from the other three.

The second difficulty—that of drawing a clear and functional division between structure and syntality variables or dimensions—is solved if we bear in mind that the former are always statements of relations among (the behavior of) group members. Outstanding among structure variables are those statements which are about the relation between the behavior of one person—the leader—and the behavior of the rest. Only statements about relations which include all members of the group constitute adequate descriptive parameters of structure. On the other hand observations of internal interaction of the whole group which do not involve relations



are not in the structure panel but in the syntality panel. For example, the total number of words spoken per hour within the group is a characteristic of syntality not structure, as also would be the ratio of criticisms to suggestions for the group as a whole. But a sociometric study of communication which showed that the group had four subgroups within it would be a statement about structure. Structure variables are in general of a higher order of abstraction than syntality variables; but structure and syntality variables are equally attributes of and statements about the group, while population measures have to do only with the people in the group.

A further difference of structure and syntality is that the former can be manipulated in experiments as the "independent variable" by introducing rules affecting the manner of internal interaction, e.g., the absoluteness of leadership. Further, less essential differences are that syntality variables can often be inferred without seeing the group as a whole: one may observe the construction job before and after the group's visit, to determine its productivity, or speak to its ambassador to determine its attitude toward another group. But to determine a structure variable, such as the social distance between classes, or the lines of hierarchical communication, one must observe internal interaction.

The relationships that exist among the data from these three panels of observation and systematization await the verdict of empirical investigation, but it is nevertheless possible to explore a priori certain major probabilities. The primary relation to be expected is that the population measures, which are a mere mean of the population level on such personality factors as general intelligence, schizothymia, surgency, and desurgency, when properly combined with statements regarding the structure of a group, should enable one to predict the syntality, that is to say the performance, of the group, in any one of a number of fields. Except where structure is imposed artificially by an experimenter or from the past by tradition, the personality measures, in conjunction with the environmental circumstances, should theoretically enable us to predict both the emergent structure and the syntality (group performance) measures that follow from it. But there will also be circular and feedback influences. For example, the success with which a group tackles a certain job, i.e., its measure on a syntality dimension or trait, is in turn likely to influence the way in which the group organizes itself. And the way in which a group organizes itself may again influence the mean level of the group's possession of certain individual personality traits.

All that can be said at this stage regarding the interaction of variables expressed in terms of observations from these three panels is that there is complex interaction and that some sort of mathematics suitable for expressing multiple reciprocal influence will eventually need to be

invoked. Meanwhile it is possible in experimental groups, but not in the field studies of natural groups, to simplify the causal relationships by controlling the time of observation. For example, the length of the experiment can be curtailed in such a way as to allow only the action in one direction to occur without time for the feedback to follow. This may prove to be the outstanding advantage of experimental work with groups when compared with observations *in situ*.

### Concepts for Analyzing Group Dynamics

Since a good deal of leadership is concerned with motivation and dynamic aspects of behavior, a further development of the above discussions specifically in regard to dynamic concepts within syntality remains to be set out before we can handle leadership formulation. For what has been said so far about population and syntality variables assumes that they are of all three possible modalities, i.e., some are abilities, some are the equivalent of temperamental reactivities and some are dynamic, goal-directed traits. Since the definition of a group which the present writer has found most meaningful turns wholly upon motivation, it is desirable to set out this definition before proceeding.

Groups have been defined by many sociologists in terms of interaction and communication, reciprocal roles and common norms, or in terms of some abstract boundary inferred from the behavior of the individuals in the group. At present one cannot say that there is one acceptable definition of a group and that all other definitions are meaningless. The various definitions cover different aspects of "groupiness" and have varying degrees of overlap and perhaps, therefore, varying degrees of essentiality. Certainly the laws which become established in regard to these different working concepts will be different.

The definition which seems most essential is that a group is a *collection of organisms in which the existence of all (in their given relationships) is necessary to the satisfaction of certain individual needs in each*. That is to say, the group is an instrument toward the satisfaction of needs in the individual. Individuals belong to the group only because they achieve certain satisfactions made possible by its organization which would not so readily be possible (or which did not happen to occur) for them through any other device. A group so defined is not continuous with a group defined in terms of interaction or common norms or of that more specialized interaction which we call communication. The lines of communication can run just as vigorously between the group and another group (as defined here) as between the members within the group, and conversely, it is possible, though uncommon, to have a true group in which very little communication exists, either among the members or between some one

leader and the members. Since this last is sometimes doubted I will instance two or three strangers, swimming far out from a beach, who give one another certain satisfactions (notably to the need for security) through their common propinquity, though no communication whatever may occur among them. Nevertheless it would probably be generally true to say that the definition by interaction and the definition by need satisfaction would lead to similar boundaries.

The definition of a group by self-awareness is different again, since it is not necessary that a group of people be aware of themselves as a group in order to obtain their satisfactions through the existence of the group. For example, there are lower animal forms which adapt to the existence of other members of the group and achieve their satisfaction through the existence of the latter without being capable of conceiving the idea of a group. And doubtless there are many examples of human beings behaving in such a way as to preserve and defend a group which satisfies them without being fully aware either of the nature of the satisfactions which they get or of the nature of the group and its boundaries to which they belong, in terms of our dynamic definition. Our playing down the role of explicit awareness is suggested also by those discoveries of clinical psychology which show that dynamic satisfactions affect behavior (especially learning) regardless of the degree of consciousness. At least the degree of consciousness of goals and modes of satisfaction affects only secondary aspects of the behavior.

Granted that a group is held together by certain interests, not necessarily the same for each individual, which are satisfied through the very existence of the group acting as an instrument for the satisfactions, the next problem which arises concerns the nature of the satisfactions obtained. As in most formulations of psychodynamic events it is possible here to use any one of three sets of concepts, each emphasizing some one aspect of the situation, as follows: (a) the stimulus situation-cue-response-goal formulation, emphasizing the definition of the detailed environmental conditions and the behavior; (b) the satisfaction (reward) and punishment of ergic or metanergic motives (7), which concentrates on the drive phenomena, ("valence" formulations may be regarded as an externalization of this formulation); and (c) the energy expression formulation which directs attention to the work done in the motivation situation.

For many purposes, including the study of groups, the energy expression formulation is the briefest. It assumes the stimulus situation is fixed and the goal behavior already defined. It implies recurrent satisfaction of a particular nature within the fixed system. It then concentrates on the work done by the organism in this defined or implied stimulation-satisfaction situation. This has proved useful in clinical psychology, and in

psychology generally, as a convenient shorthand, but it suffers from the disadvantage that the energy cannot be precisely defined.

This disadvantage we must accept for the moment with a pragmatist's shrug of the shoulders; but even in the loose sense understood there remains a discrepancy between energy and satisfaction which must not be overlooked. The notion that formulations (b) and (c) above are equivalent, in the sense that the statement "people get more of their satisfactions through this group" can be considered equal to "people express more of their energies in the activities of this group," is not strictly correct. It depends upon how much long-circuiting (7) of goal-seeking activity is actually forced upon people by external obstacles and internal conflicts. This degree of long-circuiting is, then, another condition assumed to be held constant when we handle the expression of psychodynamic relations in terms of "energy exchanges."

A statement, in terms of energy exchanges of the basic, simple laws which seem necessary for explaining the commonest aspects of group behavior has already been set down by the present writer (3). These laws will now be invoked to define corollaries in the field of leadership. First among the original theorems is a statement that any group is an arrangement permitting certain energy expenditures on the part of the component individuals, which is another way of stating the above definition of a group as a drive-satisfying device. Secondly, a theorem recognizes that since practically all groups overlap in their populations, each receives only a small segment of the total goal-seeking energy of the individuals belonging to it. The sum total of the energy which any group can command and expend I have called synergy; and the synergy will be a function of, for example, the number of members and the strength of group interest of each. It is easy to perceive that this synergy is expended broadly in two ways which are distinct in important respects. First, a substantial part, which we may call *maintenance synergy*, will be used up in the internal machinery which keeps the group in being, leaving the residue, which we call the *effective synergy*, to carry out those purposes for which the group explicitly exists. Since there is a rough exchange value between psychological energy and money, the division may be quickly illustrated by the economics of, say, an insurance company where part of the premiums are expended in office work, part in alleviating those general fears which have been the cause of the group of subscribers coming together to form a group. Or again, in a missionary society, part of the subscriptions are used in running the organizational affairs of the society and part in effectively carrying out the support of actual missionary activity in distant countries.

There is already some empirical evidence in the two factorial researches so far completed (5, 11) that the factor which has been called morale and



which loads such variables as the resistance of the group to dispersion and the energy which it puts into its activities is really a manifestation of the total synergy. This suggests also that such variables as the average disinclination of individuals to leave the group, the number of friends they will name in the group, and the hostility to outgroups which threaten the group's purposes, will be primarily loaded with this factor representing the strength of synergy. Some of the recent work of Hemphill (17) proceeds further to indicate a factor which appears to correspond to the *effective* synergy as distinct from the *total* synergy of the group.

### Application of Syntality to Leadership Measurement

In the initial observations here regarding evidence as to the existence and nature of leadership it was suggested that this evidence is to be found either in the group structure or in the group syntality. The latter may not be readily accepted by all psychologists, since it has so far been the general practice to depend on the internal interaction observations only. That is to say, the leader has been recognized by a formal office, by his influence on other individuals, or by his being named by others as the most popular or, indeed, as *the leader* (14). Consistently with this line of definition, the goodness of the leader has been measured by ratings on the part of group members or observers, by sociometric measures of popularity, and other attempts to assess internal influence.

The contention here is that this practice is a necessary expediency based on our failure to recognize or solve the problem of syntality investigation at the outset of research in group dynamics. Actually there are many cogent arguments for basing the assessment of leadership upon syntality as much as possible and upon structural observations only when the former is impossible. First, we have evidence that the structural observations are often very unreliable. For example, Gibb (14) points out that the formal, recognized leader is often a leader only to a very slight extent, being manipulated by "a power behind the throne." Carter (1) has demonstrated further that there is very poor agreement in general between ratings, dealing with popularity or sociometric criteria, when made by different kinds of observers. He says, "ratings by faculty members and friends proved to be quite unreliable." Hemphill (15) also found that there was not very good agreement between members' estimates of influence procedures and the leader's estimates. A compromise approach has been made by Shattle and Stogdill (20), where in the latter's "paradigm for the study of leadership" the usual "individual-centered evaluation of leadership" is balanced by a proposal for "group-centered evaluation," which promises to assess the leader by the performance of his group.

The present proposal for a syntality evaluation calls for shifting the estimate of the goodness of a leader entirely to measurements of the performance of the group acting under his guidance.

The most important of the pros and cons with respect to resting the assessment upon the performance rather than upon observations of internal interaction are already implied above, but some further observations may be summarized. Although both our own factorizations and the associations shown to exist in the studies of Lippitt and others (18) indicate that there are significant correlations of the kind one would expect between structure and syntality, nevertheless there is no one-to-one correspondence. If the ultimate criterion of leadership is to be the effect of leadership structure upon the actual group performance, i.e., a measurement of behavior, then it is better to measure this directly as such, at the group performance level, rather than try to infer it from the structure level. Although there is a certain amount of mutual interaction of structure and syntality, the causal effects are in the main from structure to syntality. Consequently the performance behavior is the end result from which it is safer to infer group structure than it is to infer the end result from group structure. Another important consideration is that it is the syntality phenomena which are more important and more frequently considered in all kinds of applied work, as well as in theoretical equations. Thus other countries at the time of the crisis, as well as history in retrospect, are more likely to be interested in the fact that Mr. Churchill obtained an Air Force in time to stop Hitler than in the fact that he had to argue with Mr. Baldwin and a complacent House of Commons for five years to obtain this result. Similarly in theoretical formulations, the syntality symbol is more likely to be directly involved in a wide variety of equations.

Along this line of argument, we end by defining a leader as a person who has a demonstrable influence upon group syntality. And we measure leadership by *the magnitude of the syntality change (from the mean) produced by that person*, i.e., by the difference between syntality under his leadership and the syntality under the leadership of the average or modal leader. It will be evident from these definitions that we can no longer speak of good and bad leaders, but only of leaders that are good and bad with respect to the production of increase in a particular dimension of group syntality. And whether an increase or decrease along one of these polar axes is itself to be considered good or bad will depend on the extent to which that factor weights, in the specification equation, various actual performances on which we already have values—of efficiency, of morality, or of aesthetics (4). Nevertheless, there are certain putative dimensions such as integration, cohesiveness, synergy or viscosity which must reach acceptable values for the group to function and survive as a group at all.

and presumably any leader who can increase these is good, regardless of the directions in which he is leading the group. Apart from these possible exceptions, it is perfectly safe to speak of a leader only as being good or bad for some specific performance. And further, by abstraction from the values attached to a considerable number of specific performances, we might in addition attach values to syntality change on particular primary dimensions. But at least this line of analysis indicates that we need to be far more cautious in the attachment of "good" and "bad" to leadership than we have been in the past. The whole problem of leadership investigation is swung around from "good" and "bad" to the problem of analyzing the leader in terms of increase or decrease of particular syntality dimensions.

The practical procedure in leader measurement to which this theory leads is to take a group of  $n-1$  individuals (constituting a stratified sample of the general population) and to substitute a series of leaders in succession as the  $n$ th person, measuring the group performance with respect to each of the known dimensions of syntality at each substitution. Incidentally, to make this entirely practicable it will be necessary for factor-analytic researchers first to provide saturated test measures of the half dozen or so syntal dimensions that contribute most to variance of important performances, in order that such group measurement can be economically carried out. From a normal sample of leaders, it would then be possible to build up standard scores for each dimension. Thus the individual leader could ultimately be assigned a profile, in terms of standard scores, indicating his capacity to produce syntal deviation from the mean. These values—constituting the formula for the given leader—could then be used for predicting the group performance under that individual, by substituting his  $F$  values in the specification equation. If the specification equation for groups of this type had been worked out generally for a wide variety of practical situations, it would then be possible to predict for this leader what the average group would do under him in far more situations than are comprised by those in which he had actually been measured to estimate his leadership potential.

### Synergy and the Two Main Leadership Functions

An observant practical psychologist may object to the conceptual simplicity of the above formulation that common sense recognizes two main activities of the leader and that the above calculation looks as if it would cover only one of these. The activities are (*a*) helping the group to find the machinery or means to a goal already agreed upon and (*b*) helping the group to decide upon a goal that is satisfactory in the sense that the group can stably pursue it. The first of these appears to deal with syntality, that

is to say, with the measured performances of the group, while the second seems to deal with synergy. This analysis correctly distinguishes two categories of group change that are important both for leadership measurement and group learning analysis. But it is incorrect to say that the changes of group goal—the synergy changes—are neglected by the syntality formulation. If dynamic variables—for example, observations on the group's attitudes, interests, politics, etc., as carried out by Gibb (13) and Stice (11)—are taken into the factorization of group variables, as indeed they should be in any comprehensive investigation of syntality, some of the syntality dimensions which then emerge will almost certainly have to be dynamic unities. Indeed, they are likely to be coordinates constituted by the primary drives or ergs, which have already been found in factor analyses of dynamic variables for the individual personality (9). Consequently we may confidently expect the dimensions of syntality to include the ergic dimensions of synergy, i.e., synergy will appear as the dynamic aspect of syntality. And changes of *goal* under a leader can thus be measured by *changes in the dimensions of synergy*, just as changes in the *abilities* by which goals are reached are measured in the remaining *dimensions of syntality*.

Our formulation of leadership measurement has shown, at least, that the separation of synergy from syntality and of the leadership function of choosing a goal from the leadership function of attaining a goal is in the main an act of mental tidiness, with perhaps some practical utility for handling particular dynamic research problems. Both activities can be smoothly assumed under our main generalization, namely, that the activity of the leader can be best assessed by changes in the syntality of the group under his leadership. In general, the changes which he produces in a group goal will show up as changes of the vectors of the syntality along its dynamic coordinates just as the changes which he produces in ability vectors will show up as changes in group primary ability coordinates. Whether these changes are good or bad will once again be a secondary issue, entangled with a lot of value judgments (4). The only extra condition which it seems necessary to apply when considering increase of synergy as a "good" leadership act is that the satisfactions shall be stable, i.e., that the position of increased satisfaction reached shall be one of relatively stable equilibrium, not a temporary, impossible triumph like the Nazi revolution. Probably also the syntality dimension of "goodness of integration" will be regarded as a universal "good" in leadership estimation, and this is likely to appear as some function of the relation of effective to maintenance synergy, or as a "group adjustment" variable discussed above, both of which show some signs already of appearing in the factors found among syntality variables.

„ In conclusion, it should be noticed that the definition of leadership and



leadership measurement just given proceeds regardless of whether leadership is explicit or implicit, formalized or spontaneous, permanent or transitory. In this respect it has also the politically impeccable character of favoring a democratic viewpoint in leadership assessment, for it implies that every member of the group is more or less a leader, regardless of any formalization. Leadership investigation can no longer be realistically handled by the stereotype of a single leader and a mass of followers, but must be met rather by the conception of different problem-solvers rising to different occasions. This view is foreshadowed in the work of Gibb (13) where he recorded many instances of the ball of leadership passing quickly from hand to hand, despite formal organization, when special problems arose. It is true that he found some persistence of a convergence of follower attitudes upon one individual, whether he was formally or informally the leader, but many members were in some degree recipients of such attitudes. The present theory generalizes such observations on the basis that since every man affects the syntality measures, every man is more or less of a leader. It may well be that when the magnitudes of syntal effects are plotted for all members, after a sufficient number of empirical studies, we shall find that the scores for total syntality change produced fall into skewed or J-shaped distribution curves, showing that the lion's share of leadership usually falls to one man—perhaps with some lesser share to a lieutenant and very little to the majority—but this remains to be investigated. Such a finding, moreover, would not alter the fact that our analysis calls for all men being considered as leaders and influences in any complete calculation.

The present approach to leadership measurement also leads to some other reorientations. For example, leadership behavior and procedures can no longer be arbitrarily defined as the behavior associated with the person put in the formal leadership position. What we are to study as leadership procedures must first be located empirically, by examining coefficients of association, to detect "that behavior which is found empirically to be more frequent in men who have greater measured effects on syntality."

#### REFERENCES

1. Carter, L. F., Haythorn, W., & Howell, M. A further investigation of the criteria of leadership. *Journal of Abnormal and Social Psychology*, 1950, 45, 350-358.
2. Cattell, R. B. The ergic theory of attitude measurement. *Educational and Psychological Measurement*, 1947, 7, 221-246.
3. Cattell, R. B. Concepts and methods in the measurement of group syntality. *Psychological Review*, 1948, 55, 48-63.
4. Cattell, R. B. Ethics and the social sciences. *American Psychologist*, 1948, 6, 193-198.

5. Cattell, R. B., & Wispe, L. G. The dimensions of syntality in small groups. *Journal of Social Psychology*, 1948, 28, 57-78.
6. Cattell, R. B. The dimensions of culture patterns by factorization of national characters. *Journal of Abnormal and Social Psychology*, 1949, 44, 443-469.
7. Cattell, R. B. *Personality: A systematic theoretical and factual study*. New York: McGraw-Hill, 1950.
8. Cattell, R. B. *Factor analysis for social science*. New York: Harper Bros., 1950.
9. Cattell, R. B. The discovery of ergic structure in man in terms of common attitudes. *Journal of Abnormal and Social Psychology*, 1950, 45, 598-618.
10. Cattell, R. B. An introductory note on the theory of group learning. *Journal of Social Psychology*, in press.
11. Cattell, R. B., & Stice, G. The behavior of small groups: their syntality, synergy and leadership phenomena, unpublished report to Office of Naval Research.
12. Festinger, L. Informal social communication. *Psychological Review*, 1950, 57, 271-282.
13. Gibb, C. A. The emergence of leadership in small temporary groups of men. Unpublished doctor's dissertation, Univ. of Illinois, 1949.
14. Gibb, C. A. The research background of an interactional theory of leadership. *Australian Journal of Psychology*, 1950, 28, 19-42.
15. Hemphill, J. K. Situational factors in leadership. *Bureau of Educational Research Monographs*, 1949, No. 31. Columbus: Ohio State Univ.
16. Hemphill, J. K. The measurement of group dimensions. *Journal of Psychology*, 1950, 29, 325-342.
17. Hemphill, J. K. Methods for the empirical determination of group dimensions, in press.
18. Lippitt, R. Field theory and experiment in social psychology: Autocratic and democratic group atmospheres. *American Journal of Sociology*, 1939, 45, 26-49.
19. Stice, G. The relations of attitude and interest changes, in small groups, to personality and syntality. Unpublished doctor's dissertation, Univ. of Illinois, 1950.
20. Stogdill, R. M. Leadership, membership and organization. *Psychological Bulletin*, 1950, 47, 1-14.

### 3

## A Theoretical Framework for Interaction Process Analysis

Robert F. Bales

The ultimate stuff or empirical phenomena which the social scientist can observe, record, interpret, and arrange in many ways may be thought of under two heads: (a) action or interaction, i.e., the overt behavior of concrete human individuals, and (b) situation. Those things to which action is addressed, such as the self, other individuals, and physical objects, may be said to comprise the concrete situation of action for the acting individual. All of our relevant empirical generalizations must refer sooner or later to some aspect(s) of concrete action(s) or the situation(s) of action(s). This is true whether the generalizations are made about personality, social system, or culture. Generalizations about any of these three types of systems or structures are at least one step removed (by abstraction) from the more complex and ultimate stuff we can all observe: activity addressed to persons and things. The observation of social interaction and its situation is the common starting ground for all of the social sciences.

In order to arrive at empirical generalizations about human behavior or the situation in which it takes place, it is necessary to break down action and situation into component parts, or to abstract from them analytically. This may be done in an infinite number of ways, depending upon the purpose of the scientist. The social sciences differ from one another in terms of the way they break down this ultimate material or abstract from it. For example, certain selected regularities in the action of a given human individual may be collected to yield generalizations about his personality structure. On the other hand, certain selected regularities in the distribution of types of interaction between separate human individuals in a group may be collected to yield generalizations about the social structure of the group. Again, certain selected regularities in inter-

This chapter consists of extracts from Chapter 2 of the author's book, *Interaction process analysis*. Cambridge: Addison Wesley Press, 1950. It is reprinted by permission of the author and the publishers.

action which survive over time and even in spite of complete replacement of particular members may be collected to yield generalizations about the culture of the group.

### Definition of a Small Group

The following definition is a minimum arbitrary designation constructed for working purposes in doing research. A small group is defined as any number of persons engaged in interaction with one another in a single face-to-face meeting or a series of such meetings, in which each member receives some impression or perception of each other member distinct enough so that he can, either at the time or in later questioning, give some reaction to each of the others as an individual person, even though it be only to recall that the other was present.

According to this definition, a number of persons who have never interacted with one another do not constitute a small group. A number of persons who may be physically present at the same event (such as a lecture) but do not interact with one another enough for each to be able to form any distinct impression of every other, or for the observers to produce some data concerning the relation of each member to every other, do not constitute a small group in the present sense. A number of persons so large or scattered that they interact with one another only indirectly as unknown members of subgroups or through intermediary persons or impersonal means of communication (such as an industrial organization as a whole) is too large, too complex and indistinct to fall within the definition. Some collections of people which initially appear to fall within the definition may prove, when techniques are applied, to fall outside the definition as a total group because one or several of the members may prove not to have been aware in any discernible way of the presence of one or more of the others. In this case, only that nucleus of persons, each of whom recognizes or remembers each of the others, and is in turn recognized or remembered by each of the others, constitutes the small group.

### Actor and Situation as a Frame of Reference

In the present conceptual frame, every action is treated as an interaction. The action is regarded as an interaction because it is conceived to fall between, to connect, or to relate a *subject* to some aspect of situation or *object*. Usually, but not necessarily, the observed interaction will involve at least two separate biological individuals in addition to the observer. We assume that because of the ability to manipulate symbols, which is characteristic of socialized human beings, any given person may



be an object to himself. That is, in his capacity as a thinker, evaluator, or actor, he can think about himself, have emotional reactions or evaluative judgments about himself, and act in one way toward another part of himself which is tending to act in a contrary way. As examples, we often speak of a person as talking to himself, feeling ashamed of himself, expressing himself, trying to talk himself into something, as agreeing with himself, disagreeing with himself, etc. In cases of this kind, the self is regarded as a situational focus or object, and that part or aspect of the same concrete individual which is taking the momentary reflexive role is regarded as the subject or actor. A single individual in a room working at a problem, talking to himself or thinking out loud, is thus technically regarded as engaged in interaction, and insofar as the interaction is with the self—a social object—the actor is regarded as engaged in social interaction.

The conception of the actor as only a part (the presently managing aspect) of the personality implies that the actor is not coextensive with the biological individual we observe. It is thus impossible to locate in any exact physical sense the author of the acts we observe. The author or actor involved in any present act is, for conceptual purposes, only a point of reference adopted for the analysis of that particular act.

When the standpoint of the actor is taken as the point of reference for a given act, everything else relevant to that act becomes, for conceptual purposes, a part of the situation. Actor and situation thus constitute the two poles of a major conceptual dichotomy. The actor, as the subject pole of the dichotomy, is treated as an irreducible point of reference. The situation, however, as the other or object pole of the dichotomy, is differentiated into a set of major foci. These foci are considered to be divided into two major target areas, which may be called the inner situation and the outer situation. The target objects in the inner situation include the self, and the other(s) or in-group. The target objects in the outer situation include the other(s) not present or belonging to the out-group, and all of the residual physical objects, spatial and temporal relationships, which may be relevant to action but which are not subjectively identified by the actor as a part or aspect of self or in-group.

### Problem-Solving Sequence as a Frame of Reference

We assume that the total process of action constitutes a complex system. We conceive of it as involving a distribution of phases, or parts, or aspects in the time dimension. We find also that it has an internal complexity at any given point in time. Finally, we find that the process is complex in that it involves a distribution of parts or phases between persons.

We recognize, then, that the interaction system is distributed in time and between persons, and is in contact with a situation which is a constant source of problems. We recognize tension reduction and reintegration as the state of affairs toward which the system tends, but also as a state of affairs which demands the intermediary solution of a nesting series of subproblems which may fail of solution at any point and for any number of reasons external to the system as such. If there is a failure of solution of any of the subproblems we assume there is by so much a failure of tension reduction, and the integration of the system is threatened. Even in cases of successful solution of the subproblems we assume that there is a "wear and tear" involved in the solution of subproblems. This "wear and tear" demands periodic activity oriented more or less directly to the problem of distributing the rewards accruing from productive activity back to individual members of the system and reestablishing their feeling of solidarity or integration with it. In particular we believe that the necessities of control or modification of activity in order to control the outer situation productively is likely to put the existing integration of the system under strain, no matter how successful the attack on the situational problem may eventually be.

### **The Social Structure of the Group as an Aspect of the Interaction System**

Within the actor-situation frame one of the major target areas distinguished was that composed of the other(s) or in-group. Here we shall be concerned primarily with internal differentiations within this target area and with the self in relation to it. A target object is defined as that area or focus in the situation (i.e., self, other or in-group, or outer situation, or the process of action itself) which the actor aims to affect or change, or which is affecting and changing him, and to which he is therefore giving primary attention in the present momentary act.

The actions of other individuals in the situation are always relevant to the problems of tension reduction of any given individual, since the action of others may aid or interfere or modify his own activity in various ways. It is to the advantage of every individual in a group to stabilize the potential activity of others toward him, favorably if possible, but in any case in such a way that he can predict it. All of the individuals in the group are in the same boat so far as this problem is concerned. All of them, even those who may wish to exploit the others, have some interest in bringing about stability. A basic assumption here is that what we call the "social structure" of groups can be understood primarily as a system of solutions to the functional problems of interaction. These solutions become institutionalized in order to reduce the tensions growing out of

uncertainty and unpredictability in the actions of others. The "culture" of groups similarly is to be understood as a system of solutions to the functional problems of interaction, but in this case the emphasis is on the problems arising out of the relation of the system to its outer situation in semiabstraction from its internal relations. It is emphasized that the differentiation between social structure and the rest of culture is only a differentiation in direction of abstraction from the same concrete interaction system.

At this point we need to recognize explicitly that all of the small groups we are theorizing about are made up of persons who come into the group with abilities of symbolizing and communicating already formed. They have had experience in social interaction before, and presumably come into the group with certain generalized ideas or stereotypes as to the kinds of relationships persons can have with one another, or as to the kinds of roles which they can play, or would like to play, or feel they should play. In short, we assume that they bring with them a frame of reference, however vague, about the main kinds of social relationships people can have with one another.

We need, then, a specification of the most general or universal kinds of differentiation which exist or develop between persons as units in small groups. These most general differences, we assume, grow out of the differential functional roles or significances of persons with regard to one another in problem-solving sequences with cognitive, affective, and conative aspects, and in the subject-object polarity. According to our analysis, four kinds of differentiation among persons are generated in this manner.

1. *Differential degree of access to resources.* Insofar as the process of interaction in the group is instrumental in character, it involves the utilization of means to anticipated ends. These means may be directly available or accessible only to certain members of the group because of their particular kind of relation to the outer situation or their own personal characteristics or skills. Other members in the group will only be able to use these means or resources through the actions, positive help, or permission of those who have direct access. In other words, persons may have different *positions with regard to one another* growing out of differential advantages in the possession of resources by certain persons to which others, either as a matter of fact or as a matter of rights and duties, do not have immediate access. The observer thus expects that in any group in which the process of interaction and its fruits or results in terms of satisfaction or motivation reduction are subject to a sharing between persons, certain sequences of activity will appear in which the aim of one or the other person is to change or maintain these differential advantages between persons. These relationships or relative positions, and the activity which takes place within the context of this differentiation, tend to be-

come institutionalized, i.e., stabilized and legitimized, and in larger social systems are referred to as the structure of property relations.

The institutionalization of property relations as it is found in larger social systems has no very obvious counterpart in many small groups, where physical goods or resources are not involved prominently. Nevertheless, for any given actor in the group there are features of the situation which have the essential character of resources for the satisfaction of wants or the maintenance of an integrated unfolding of the process of action. Freedom from control, the possession of time, physical objects, and specific services are all either resources to further goals or goals in themselves which are possessed in varying degrees by members of the group and which can be given or withheld by given persons with regard to others. Any resource which is not unlimited, or which may be divided between persons, or which in its nature is such that as one person has more another automatically has less, may require the stabilization of activity related to its distribution in order to prevent insecurity or deprivation on the part of the disadvantaged members. In general we may say that, given the facts that action takes place in a social situation and that the cooperation of others in various respects is needed for successful problem solving, then the giving of help or services, the assurance of noninterference or freedom, the granting of time, or the distribution of other resources which can be divided between persons are types of activity which, if unstable or unpredictable, may create tensions; and in time these will tend to create pressures toward the stabilization of rights and duties with regard to this distribution.

2. *Differential degree of control over persons.* The instrumental character of the process of action, along with the fact that the activity of others may be means to ends (the ends either of particular persons or of the group as a whole), makes it more or less inevitable that persons should try to influence, guide, or control the activity of one another by direct request or fiat. It is one of the brute facts of the social situation as the actor faces it that other individuals in the group, either singly or in combination, do possess superior physical power over him and may force him to act as they desire. They may prevent him from attaining his individual goals by suitable combination with one another, or may force him to act in such a way as to attain their own goals. Since this possibility is present, it is to the advantage of all individuals in the group to come to some stable legitimate expectation as to the way in which their potential power over one another will be exercised. This is one source of pressure toward the institutionalization of direct control of persons over one another.

There is also another important source of this pressure. Insofar as the reaching of goals requires cooperative effort, the complication of the outer situation is often such as to require a complicated division of labor



as a feature of the cooperation. Whenever a division of labor appears in an effort to cope with an outer situation, the need for coordination of the various efforts in various places and various times becomes apparent. Unless these efforts are coordinated, they are subject to failure. One obvious way to coordinate them is by coming to an agreement that some person or persons shall be given a right to control the activities of those persons who are addressing their efforts directly to the task. This necessity of coordination makes the control of certain persons over others an advantageous and often a necessary part of the instrumental process or the process of reaching goals. So, both from the fact that persons can control one another by force or coercion and from the fact that they need to control one another because of complicated divisions of labor addressed to problem solution, there arise pressures for some kind of regularization or institutionalization of the control relations between persons. In every group the observer expects to find, at least, pressures toward a stabilization of control of persons over others. This order of control, once established, and the nature and extent of this control become a part of the framework within which any given actor must operate in the problem-solving process. This framework, when institutionalized as to the rights and duties involved, may be called the structure of authority.

3. *Differential degree of status in a stratified scale of importance or prestige.* The stratification of persons with regard to one another, in a more generalized sense than that implied simply by superiority of access to resources or by authority, can be derived from a consideration of the evaluative elements involved in the problem-solving process and from a consideration of the tendency toward "generalization." We have assumed that individuals are oriented to a multiplicity of goals, and that they evaluate the factors in their situation with regard to whether or not those factors are conducive to, or threaten, their need satisfaction and their expectations. If we recall that other persons and their conformity to institutionalized norms of behavior can play this role, we must conclude that it is more or less inevitable that individuals should evaluate not only impersonal objects in the outer situation, but also one another as persons. Every individual who is concerned with the reaching of goals, whether acting for himself alone or on behalf of the group, will be impelled to evaluate other persons in terms of how they relate to the achievement of these goals, and in terms of whether their activity tends to maintain or destroy the norms upon which emotional safety depends.

This evaluation is not necessarily an all-or-none classification as "good" or "bad," but rather the situation in most instances is such that it is possible to make a kind of rating of other individuals as units with regard to the degree to which they contribute to the reaching of a goal, or the degree to which they conform or fail to conform to an ideal institution-

alized norm. The stratification of persons, their relative prestige with regard to one another, is an outcome of the process of evaluation or affective judgment as a general aspect of the problem-solving process applied to persons in a "generalized," nonspecific way. It is a critical problem for the group to reach basic consensus with regard not only to the major values they hold, the goals they wish to reach, and the means permitted or required to reach them, but also with regard to the relative stratification of persons as units, on the basis of their contribution or lack of contribution to the total process of action, including the realization of ideal norms. Just as disagreement over major values may produce frustration of the problem-solving process, so also may disagreements or uncertainty about the relative value or prestige of persons produce frustration, anxiety, or aggression; or they may perhaps make cooperation impossible.

If and when a basic consensus as to the proper status order of persons is established in the group, the group may be said to be stratified. The group may be said to possess a stratification if this stabilization as to generalized status has taken place, even though in some exceptional cases all members are regarded as having essentially the same equal status. In this extreme case it may be said that the participants visualize a hierarchy of positions which constitute the scale but that all individuals fall in the same place on the scale, with the positions above and below unoccupied.

4. *Differential degree of solidarity or identification with the group as a whole as constituting a "subject" in-group as over against an "object" out-group or outer situation.* If we assume that individuals live together in an outer situation which makes at least some demands that no individual person can meet without help from others, that the fullest extent of need satisfaction requires the cooperation of people, then we would expect to find in every group the attempt to institutionalize the obligation of cooperation, or the obligation to subordinate individual goals and interests to the goals and interests common to the members of the in-group. If the instrumental task demands cooperation, it is to the ultimate advantage of every person in the group to have the obligation to cooperate and to subordinate individualized interests made explicit, and made a matter of legitimate expectation. The observer thus expects to find either a spontaneous identification of the persons of the in-group with one another, or pressures toward the development of obligations on each individual to regard himself as a part of a larger whole which includes the other.

Solidarity in its institutionalized aspects, as we define it, consists in an obligation and a right: the obligation to identify one's self cognitively, affectively, and conatively with the other, to perceive one's self as a part of a larger whole, to feel the other's concerns as one's own, to cooperate with the other, to share the other's fate, and the right to expect these attitudes and actions from the others. Solidarity, as an existing kind of

relationship between two or more people, of course involves aspects other than those structured as rights and obligations. There are many factors of group life which operate to strengthen or produce a kind of spontaneous solidarity, such as the possession of a common language, the sharing of a common thought process, common problems with regard to the outer situation and common definitions of its significance, the possession of definite modes and channels of communication, and the opportunity or fact of frequent association; but the heart of solidarity in the institutionalized sense is the stabilized mutual responsibility of each toward the other to regard himself as a part of the other, as the sharer of a common fate, and as a person who is under obligation to cooperate with the other in the satisfaction of the other's individual needs as if they were one's own. Solidarity in certain of its aspects is a quality of social relationships which tends to arise spontaneously. It does not necessarily arise because it has an instrumental value in the problem-solving process for each, since it is in part an unpremeditated result of the expression of affect toward others and inclusion in an in-group. The fact that it exists, however, does have instrumental value for each, and the preserving and maintaining of it has instrumental as well as expressive value.

The four kinds of differentiation discussed above express what we believe to be the most generalized ways in which persons relate themselves to one another. These differences in social position arise more or less directly out of the most generalized features of the process of action as it goes on in a subjective-objective polarity. The position of a person in these various respects, as well as the networks or scales of positions themselves, are considered to grow out of problem-solving interaction. Once the social structure of the group has been established, however, it thereafter constitutes a part of the framework within which all activity continues. When this framework has been established in a particular group, the action patterns of the members with regard to one another become more predictable. The existence of these predictable patterns gives a certain stability to the situation of action of each individual. Conformance to or violation of expectations becomes a means of managing anxiety and aggression. The orientation of the individual to the main structural features of social relationships gives rise to a functionally autonomous constellation of motives.

We assume that at the time of any given act, the actor conceives of the self as having a kind of generalized position in each of these networks or frameworks insofar as they have become stabilized in the group as a whole. Thus we might speak of one person as entertaining the implicit or explicit assumption that he (*a*) is generally in a position to command certain resources valuable to the group (perhaps he is expert in certain skills they require); (*b*) is in a position to control the activities of other persons (as an executive agent or leader with certain legitimate authority); (*c*) has a



high generalized status; and (d) is a fully solidary member with legitimate obligations to regard the interest of others as his own. We might speak of another person as entertaining the implicit or explicit assumption that he lacks command over resources valuable to the group (he has no special knowledge, skill, or possessions), that he is generally required to subject himself to the authority of the first, that he has a low generalized status, and that he is a peripheral member of the group with individualized aims and interests which differ widely from those of the other members of the group, and which he is not willing to relinquish. These two persons would have extreme positions with regard to each of the four frameworks described. There are, of course, intermediate positions, and positions which are anomalous in that they combine extreme positions in certain of the frameworks with opposite extremes of position in the others.

In these illustrations we have been speaking of the kind of generalized positions which persons in the group both tend to achieve and have ascribed to them, as the process of stabilization of expectations proceeds. To an important extent, however, any such position is unstable in that it is in a constant process of being created, validated, or renewed. It is unstable also in the sense that the exigencies of the process of action, as it changes in response to instrumental or expressive needs, constantly confronts persons with the necessity of action which may not be consonant with their former positions. A change in the outer situation and its demands, a gradual or sudden change in major values or goals of the group, a change in ideal norms of behavior, a change in the expectations of other persons or their willingness to accept and maintain their former positions—various changes, momentary or more permanent—may create strains in the position of the self, and may produce or call for action which leads to a change in the social position of the self. Thus a person generally in command of resources valuable to the group may find himself lacking in those things needed as the group confronts a new problem. He may then find himself in a position of having to ask for help from some other person in the group who has before been regarded as having a lower status. Or as a person generally with authority, he may have to submit in some present act to control from another person who before was in an inferior position. In fact, we assume that in every act the position of the self in these various dimensions of social relationships is potentially at stake, in the sense that the act may conform with the expectations of others and reinforce or confirm the present position, or help make it, or may deviate either in a positive or negative way from expectations and lead toward a change in position. [*Editors' note:* Two empirical studies that have been conducted within this theoretical framework may be found in Chapters 26 and 29.]



## Leadership, Membership and Organization

Ralph M. Stogdill

The present paper is concerned with a point of view regarding the relation of leadership to group organization. It represents one attempt within the Ohio State Leadership Studies staff to clarify and systematize certain aspects of the leadership problem. Such clarification appears to be necessary as a preliminary step toward the development of an integrated program of research on leadership problems in formal organizations.

The pioneering work of Lewin (9), Moreno (10), and their followers has resulted in marked progress in the development of methods for studying leadership as a phenomenon of groups. However, comparable progress remains to be made in the development of methods for the study of leadership as an aspect of *organization*. Several factors appear to have operated as barriers to the development of scientific theory and method in this area. One is the lack of an adequate definition of leadership. A second is the fact that, in much of the literature on leadership, the terms *group* and *organization* are used interchangeably or are defined in exactly the same terms. A third derives from two opposed theoretical approaches represented, on the one hand, by those theories of organization in which the leader is conceived as a symbol of authority or an embodiment of superior personal traits, and, on the other hand, by a type of group-oriented theory in which leadership appears to be regarded as a manifestation of social pathology. A fourth and related obstacle results from a reaction of social scientists against the authoritarian principles advanced in many discussions of organization. Some social theorists appear to reject all concepts of organization as authoritarian, and some researchers appear reluctant to deal experimentally with such concepts as responsibility, authority, stratification, and similar phenomena related to organization. It is beyond the scope or the purpose of this paper to portray the magni-

Reprinted from *Psychological Bulletin*, 1950, 47, 1-14, by permission of the author and the American Psychological Association. This work was jointly supported by the Office of Naval Research and the Ohio State Univ. Research Foundation.

tude of the latter two difficulties. Nevertheless, it seems relevant to recognize the fact that they are present and act to the detriment of scientific work in the field.

The Ohio State Leadership Studies are being conducted on the basis of these assumptions: (a) that group organization is a recognizable social phenomenon in our culture; (b) that as such it is a legitimate subject for scientific study; and (c) that the variables of organization can be isolated and defined so as to permit their scientific study. It is the purpose of the present paper to examine various concepts relevant to leadership and organization, and to develop a formulation of the problem which will suggest hypotheses that can be subjected to experimental test.

### Groups and Organizations

Wilson (17) has reviewed the important sociological literature relating to concepts of the social group. He reports that in "current sociological literature one finds no consensus as to the meaning of the *group*," and concludes that much experimental work is yet to be done in order to delimit the group concept in any satisfactory manner. An important step in this direction has been made by Hemphill (5), who has devised scales for the measurement of such group dimensions as size, permeability, stability, viscosity, homogeneity of membership, and the like.

The most satisfactory definition available at the present time appears to be that of Smith (15) who defines a *social group* as "a unit consisting of a plural number of organisms (agents) who have collective perception of their unity and who have the ability to act, or are acting, in a unitary manner toward the environment." Krech and Crutchfield (8) present a similar view. They state that "the criteria for establishing whether or not a given set of individuals constitutes a psychological group are mainly two: (a) all the members must exist as a group in the psychological field of each individual, i.e., be perceived and reacted to as a group; (b) the various members must be in dynamic interaction with one another."

A special kind of group is the *organization*. An organization may be defined as a social group in which the members are differentiated as to their responsibilities for the task of achieving a common goal.

Znaniecki (18) has reviewed the sociological literature relating to various concepts of organization. He stresses the fact that the terms *group* and *organization* are rather tenuous concepts, in that it is often difficult to determine whether a particular aggregate of persons constitutes a group, and that it may also be difficult at times to determine whether a particular group can be regarded as an organization. He points out that *social organization*

... can be realized only in a lasting "social group" or "association." Individuals belonging to such a group are aware that they will be regularly expected to perform certain actions, and some of them act as organizers, leaders, coordinators of the regular activities of others with reference to the common purpose. Not all of these individuals need be continuously active; indeed, in many groups a considerable proportion remain passive, acting only in reaction to the actions of others. The common purpose of the organized actions may be simple or complex.

Some of the consequences of distinguishing between the terms "group" and "organization" are the following: First, there is nothing in the term "group" which gives any clue as to the nature of leadership. Second, there is nothing in the group definition which provides any foundation for integrating leadership with group phenomena, except at a superficial level of social perception or interaction. Third, the group orientation can suggest research methods relating to leadership only insofar as the social group is defined in terms of organization. The concept of organization, however, with its implications for the differentiation of responsibility roles, does permit the study of leadership as an aspect of the relationships between members who are coordinating their efforts for the achievement of common goals.

A group may or may not have leaders. If it does have leaders, it is an organization, for at least some of the members are thereby differentiated from the others as to responsibility or role expectation in relation to some common purpose. The members of a group may or may not have mutual responsibilities for a common task. If the members do have differentiated responsibilities in relation to common goals, then the group is an organization—a particular kind of group. The continued presence of leaders and of responsibility differentiations in relation to group goals are indicative of organization. It may not always be easy to determine the exact point at which a group emerges into an organization.

### Leadership as an Aspect of Organization

The following definition of leadership may serve as a starting point for discussion. Leadership may be considered as the process (act) of influencing the activities of an organized group in its efforts toward goal setting and goal achievement. The definition of leadership relates it directly to the organized group and its goal. It appears that the minimal social conditions which permit the existence of leadership are the following:

1. a group (of two or more persons)
2. a common task (or goal oriented activities)
3. differentiation of responsibility (some of the members have different duties)

There are innumerable other group and situational factors which may influence leadership in varying degrees, but these appear to be the minimal conditions which will permit the emergence of leadership. There must be a group with a common task or objective, and at least one member must have responsibilities which differ from those of the other members. If all members perform exactly the same duties in exactly the same way there is no leadership. A leader then is a person who becomes differentiated from other members in terms of the influence he exerts upon the goal setting and goal achievement activities of the organization.

The foregoing discussion suggests that leadership cannot emerge unless the members of a group assume different responsibilities. It has been suggested that group organization also is founded upon differentiation of responsibility. It would then appear that leadership and organization are derived from a common factor or, viewed from a different light, that leadership is an aspect of group organization. This view has been expressed in various forms by writers in the field of business organization. Davis (3), for example, states that the

... development of organization structure is largely a problem in the division of responsibility, and involves two important problems: (a) the grouping of similar functions to form the various organization elements in a manner that will promote effective cooperation, and (b) the determination of the proper relationships between functional groups and organization elements, with a view to promoting both cooperation and effective executive leadership.

The definition of leadership does not specify how many leaders an organization shall have, nor whether the leadership influence of an individual is continuous or intermittent, nor whether the influence of the leader shall be for the welfare or the detriment of the organization and its members. It merely specifies that leaders may be differentiated from other members in terms of the extent to which they influence the activities of the organization in its efforts toward the achievement of goals. The definition of effective and ineffective leadership is an additional problem.

### Aspects of Responsibility

Brown (2) in a challenging analysis of organization maintains that "An enterprise is a mosaic of its individual responsibilities. The sum of them must exactly equal the whole requirement of administration." He continues, "Responsibility is that part in administration which is assigned to a particular member of an enterprise. Its definition is an act of organization."

Responsibility cannot be regarded as a simple or uncomplicated variable. Jucius (7) writes,



By responsibility is meant, first, the obligation to do an assigned task, and, second, the obligation to someone for the assignment. But what is meant by obligation and how far does it extend? This implies a willingness to accept, for whatever rewards one may see in the situation, the burden of a given task and the risks which attend in the event of failure. Because of the rewards and penalties involved, it is highly essential to specify the limits of responsibility.

Formal organization can seldom define all the possible variations of responsibility and personal interaction to be expected of all members in all situations. Nevertheless, organization appears to be founded upon a basic system of stable expectations regarding differential responsibilities and relationships among the members. This is not a one-way process. That is, it is not the organization alone which sets up role expectations for its members. The members set up expectations for each other and for the organization as a whole. It is assumed, for purposes of the present discussion, that this principle applies not only to stratified organizations, such as military and industrial establishments; it applies as well to membership in any organized group, whether it be a business, political, educational, religious, fraternal, or social organization, and regardless of size, stratification, purpose, or member characteristics. The essential relationship which makes possible the conduct of organized group activities is a differentiation of responsibility roles among the members. Without this there is no possibility of coordination or of leadership toward goal achievement. The very process of organization defines the responsibilities of the members and, thereby, the formal leadership of the group. It is true that in some organized groups, such as recreational groups, the responsibilities of members may appear to be vaguely defined. However, this is not equivalent to saying that no responsibilities exist.

Responsibility, in its broadest scope, defines not only the duties for which a member is accountable, but it also defines the persons to whom and for whom he is accountable in the discharge of his duties. In doing so, it also defines a member's formal status, or location in the organization hierarchy. Authority and formal status systems in organization are but **aspects of the division of responsibility.**

Responsibilities in a systematic organization are determined by the assignment of persons to particular positions, the duties of which are outlined in an organization manual or organization chart. In less systematic organizations the responsibilities of a particular job or position may be determined by on-the-spot instructions, by general hints or by un verbalized assumptions. In a systematic organization an individual's *work patterns* (the tasks he *actually* performs) will correspond fairly closely with his *responsibility patterns* (the tasks he *is supposed* to perform). However, as the mission and activities of the organization change

there will be found in many instances an increasing discrepancy between the tasks being performed and the responsibilities originally outlined and defined.

### Attributes of Organization

The studies of Roethlisberger (12) and others have directed attention to the factor of informal groups within formal organization. In formal organization, as usually defined, refers to the friendship groups and cliques, based upon close association, mutual interests or antagonisms, and the like, which develop within formal organization. It has been pointed out by Homans (6) that this conception is too narrow, since what is informal in a factory may be formal in a primitive society. Firey (4), who defines informal organization in terms of schism, presents a more useful approach to the problem. He maintains that "if we regard behavioral conformity, in which interactional processes are highly repetitive and synchronized, as the overt counterpart of a social system, then behavioral nonconformity may be taken as the overt counterpart of schism within a system."

An organization in operation seldom corresponds exactly with the organization model as charted. The intervention of human social factors and other influences results in the emergence of informal organization, that is, in the development of work patterns and interaction patterns which do not correspond with responsibility patterns.

It would appear then that there are two fundamental sets of variables which define the operations of an organized group:

#### 1. *Variables which define formal organization*

- a) Responsibility variables (the work one is expected to do)
- b) Formal interaction variables (the persons with whom one is expected to work)

#### 2. *Variables which define informal organization*

- a) Work performance variables (the tasks one actually performs)
- b) Informal interaction variables (the persons with whom one actually works)

If we regard the variables listed above as basic variables of organization, we can also regard them as variables of membership and of leadership. In other words, an organization can be studied in terms of these four types of variables: responsibilities, work performances, formal interactions and informal interactions. Leadership can also be studied in terms of the same variables.

*Responsibility* variables define the duties that the members are expected to perform. The responsibilities of a given position may remain the same, whether A or B occupies the position. *Work performance* variables

are defined by the tasks performed and by the methods of their performance. Individual A may accept a position previously occupied by B. The responsibilities as defined by organization charts and manuals may remain the same, but the tasks actually performed by A may differ somewhat from those performed by B, and the methods of performance may vary markedly.

*Formal interaction* variables define the persons to whom and for whom the members are accountable, as well as others with whom they are expected to cooperate, in the discharge of their responsibilities. *Informal interaction* variables are defined by the persons with whom the members actually work and cooperate in the performance of their tasks.

Informal organization comes about as a result of the development of discrepancies (a) between work performance and responsibilities as defined and (b) between informal interactions and formally defined interactions. Thus leadership is ever confronted with the task of reconciling discrepancies—discrepancies between what ought to be done and what is being done, between goals and achievements, between organizational needs and available resources, between the needs of individual members and the requirements of organization, and between formal lines of cooperation and informal patterns of cooperation.

An organization in action comprises a complex of many variables in interaction. In making a pictorial representation of a business organization, the usual procedure is to plot the division of formal responsibility on a two-dimensional chart. The horizontal dimension of the chart shows the division of responsibility for various kinds of work. The vertical dimension of the chart shows the division of responsibility for different levels of decision making, and indicates the persons to whom one is accountable and those for whose performance one is accountable in the discharge of duties. This dimension defines the formal authority and status systems of the organization. Level (position in the organization hierarchy) and function (kind of work performed) are not independent dimensions. Although functions tend to differ from level to level, there is considerable overlap. Results from the Ohio State Leadership Studies (13, 16) have shown that the functions of top leadership tend to be supported at each lower level in the leadership structure by increasingly more detailed and routine work in the same functions.

Personal interaction can also be conceived as varying in both horizontal and vertical directions. The horizontal dimension is defined by the range (number) of members with whom an individual interacts. Some persons tend to work alone or with single individuals, while others are observed to work with large numbers of persons. The vertical aspect of personal interaction is defined by the number of strata (echelons)

above and below his own in which a member works with others. Some persons may be observed to work only with others at the same level in the organization. Others tend to work only with subordinates, and still others tend to work only with superiors. These tendencies may or may not represent expression of individual differences in social interaction patterns. Results obtained thus far in the Ohio State Leadership Studies suggest that these patterns of interaction may be determined in part by the functions served by various types of positions. Technical consultants and staff aides tend to spend more time with superiors. Members in supervisory positions are observed, as would be expected, to spend more of their time with assistants and subordinates. Members in coordinative positions tend to spend time with superiors and subordinates, as well as with associates at the same level in the organization. A member's function or duties may determine to a considerable degree which persons in the organization he may influence, as well as the nature of the influence that he can exert.

### **Group Organization Defines and Delimits Leadership**

The very process of defining responsibility serves to structure and delimit the role that the leader may play in the organization. He cannot perform all the duties of all the members. His own accomplishment is therefore dependent upon the performance of others. His responsibilities are circumscribed by the outlined procedures and delegated responsibilities necessary for the achievement of stated goals.

Each member must work within the organizational framework which defines the limits of his participation (how far he ought to go and beyond which he ought not to go) in performance of duties. It also sets the requirements for his cooperation with others and defines his relationships with his superiors and subordinates. This organizational structuring is not viewed alike by all persons. To some it appears as a barrier to participation or recognition. To others it appears as a prod and stimulus to greater effort and participation. For still others it provides a secure and comfortable sphere of activities and working relationships. Organization, therefore, in defining the responsibilities and working relationships of its members, sets up barriers to participation, as well as facilitating it.

Even as the organization sets boundaries by providing a framework within which members discharge their responsibilities, so the individual presents various barriers to the influence of the organization upon his own behavior and reactions. Some members may be limited in capacity to discharge their responsibilities, while others who are highly skilled in the techniques of their responsibilities are limited in capacity to



interact with others. Each member carries into the organization his past experiences, his needs, ideals, personal goals, and commitments to other organizations, which may modify and determine his capacity for participation. It would appear that the extent to which the behavior of different members is determined by the characteristics of the group represents a continuum from little to great; and, also, that the extent to which the behavior of the different individuals determines the behavior of groups may be conceived as representing a similar continuum.

It becomes apparent that a study in leadership represents a study of relationships, of variables in interaction. According to Pigors (11), a study of leadership must consider (a) the leader, (b) the members as individuals, (c) the group as a functioning organization, and (d) the situation.

All organizations operate within a larger cultural and environmental framework. No organization can escape entirely the influence of the external situation. The organization may be influenced by the availability of resources, by changes in the social order of which it is a part, by competition of other organizations for the participation, resources or loyalty of its members, and by innumerable other factors outside the control of the organization itself. These factors also influence the leadership of the group.

### Leadership and Effectiveness of Organization

According to Barnard (1) the persistence of cooperation depends upon two conditions: (a) effectiveness, the accomplishment of cooperative purpose, and (b) efficiency, the satisfaction of individual motives. Thus although in many situations it may appear desirable to effect a maximum of goal achievement with a minimum of organizational expenditure, such a procedure might jeopardize the welfare or morale of the members. It then becomes evident that there are many situations in which organization is confronted by a complex of contradictory factors which must be considered in arriving at a decision. It also becomes apparent that the effectiveness of an organization cannot always be evaluated in terms of the degree to which it has attained its objectives. It may be necessary first to evaluate the goals and objectives themselves or the cost of their attainment. A carefully thought out discussion of factors to be considered in setting organizational goals, arriving at decisions, and evaluating the success of an organization has been presented by Simon (14). He states, "The accomplishment by an administrative program of its organizational goals can be measured in terms of *adequacy* (the degree to which its goals have been reached) or of *efficiency* (the degree to which the goals have been reached relative to the available resources)." Simon, in agreement

with Barnard, maintains that the criterion of adequacy alone is not valid as a measure of group accomplishment. He observes that "the fundamental criterion of administrative decision must be a criterion of *efficiency* rather than a criterion of *adequacy*. The task of administration is to maximize social values relative to limited resources."

If organizational goals are employed as reference points in evaluating effectiveness, then the goals themselves must be subject to evaluation. In addition, the cost (human or material) of goal attainment must be considered as a factor in evaluation. Both Barnard and Simon imply that organization cannot be regarded as a unit in isolation—or as a law unto itself. The motive of organization is the creation of social value or goods for its members, and these values bear some significant relation to the values of society in general.

Since leadership is related to the determination of group goals, it becomes apparent that the leader is seldom a free agent. In influencing the activities of the organization in its striving toward goal achievement he must consider certain social values, not only in relation to the members but in relation to society as well. If he ignores the welfare of the members he is likely to lose their following. If he ignores the welfare of society he is likely to lead his group into difficulty. Thus leadership is subject to determination by factors which are external to the organization as well as by internal group factors.

### The Definition of Leadership

The definition of leadership as a process of influencing the activities of an organized group in its task of goal setting and goal achievement should, perhaps, be reexamined. Does it define leadership? What are its implications? Admittedly, it defines only at a high level of generality. Certainly it does not include all social acts and influences, but it is, nevertheless, an inclusive rather than a restrictive definition of leadership. Even so, it is more restrictive than most of those attempted in the recent literature. The definition restricts leadership to influence within the organized group. It does not imply domination or direction of others, nor any technique of influence; nor does it specify any particular member who should be regarded as a leader. The definition permits the study of any member of an organization to determine the extent of his leadership influence, and permits consideration of the possibility that every member may contribute toward determining the leadership of the organization.

The definition carries the implication that leadership may be not so much an attribute of individuals as an aspect of organization. In this respect it parallels the concept of authority. It is generally recognized

that an executive in a business concern has authority in relation to his employees only during the time they are working as members of the organization. His authority does not extend outward into the direction of their personal or social lives. Nor does his position as an executive give him authority over other persons who are not members of his organization. In other words, authority is a relationship that exists between persons who are mutually participating as members of an organized enterprise. Authority is not an attribute of one or a few persons. Authority is an interactional process by means of which the organization defines for each individual the scope for action he has in making decisions, carrying out responsibilities, and enlisting the co-operation of others. The authority of any single individual will be largely circumscribed and defined by the authority of others; and, at the same time, his own degree of authority will in part determine the authority of others.

Leadership appears also to be determined by a system of interrelationships. As such it must be regarded as an aspect of organization, just as authority is a derivative of organization. If leadership is determined by a system of interacting variables, then each of the several dimensions of responsibility and personal interaction might be conceived as representing a gradient of influence. If so, then it should be possible to measure leadership influences in terms of these dimensions.

Some members may be regarded as rating higher than others in leadership by virtue of the fact that they have responsibility for making decisions which exert a marked influence upon the activities of the organization. Some members may influence the activities of the organization as a result of personal interaction with other members, even though they do not hold positions of high level responsibility. Some members may rate high in both types of influence. It would not be expected that any organization could be found in which all influence is exerted by a single member. It would, rather, be expected that all the members of the organization could be ordered or ranked to some degree in terms of the influence they exert in various dimensions. The proposal to measure leadership in terms of the influence exerted by individuals may appear to contradict the statement that leadership is an aspect of organization rather than an attribute of individuals. But this is not a necessary conclusion. It was pointed out that authority is generally understood to be an aspect of organization. However, it can be observed that some members exercise more authority than others. The judgment can also be made that some persons have "too much" or "too little" authority. Such observations indicate an evaluation of conditions relative to various factors in the organization. In the same way it can be observed that member A exerts more leadership influence in some

situations, while members B, C, and D exert more influence in determining activities of the organization in other instances. It may be that the leadership of A is circumscribed by the leadership of B, C, and D, who are in competition with him; or it may be that the leadership of A is dependent upon the supporting leadership of B, C, and D. In either event, the leadership influence of any one member is determined in part by the leadership exerted by others, and the balance may change from time to time.

### Summary

An organization is composed of individuals. Its existence is dependent upon the cooperation and performance of individuals who play different roles. Measures of authority, leadership, and the like, are but measures of aspects of organization, even though the measurements are made in terms of members and the relationships among members. Leadership exists only insofar as individuals, as members of an organization, are differentiated as to the influence they exert upon the organization; and the leadership influence of any one member will be determined to a large degree by the total leadership structure of the organization. It is for this reason that leadership has been here defined in terms of influence upon the activities of the organization, rather than in terms of influence upon persons.

The advantages of this formulation of the leadership problem are as follows: First, it removes leadership from the broad, vaguely defined realm of social interaction in general, and integrates it with the basic variables which describe an organized group. Second, and more important, is the fact that it suggests the development of methods for studying leadership as an aspect of work performance, work methods, and working relationships.

An attempt is being made to develop such methods for the Ohio State Leadership Studies. For example, the goals and structure of organization and the responsibility patterns of members are determined by examining organization charts and manuals and by interviews with members of the organization. Work patterns are determined by modified job analysis procedures. Sociometric methods are employed to determine working relationships between the members and to chart the informal organization. The social values and role concepts of leaders and members are studied by means of attitude scales. These methods are supplemented by various check lists and rating scales.

In conclusion, a word of caution may be in order. The present paper has been concerned with a search for the minimal factors which will permit a functional integration of the concepts of leader, member, and



organization. In attempting to isolate these minimal common elements, many other important factors associated with leadership and group functioning have been excluded as not contributing to this central purpose. The present formulation represents merely one segment of a set of hypotheses to be subjected to experimental test.

## REFERENCES

1. Barnard, C. I. *The functions of the executive*. Cambridge: Harvard Univ. Press, 1938.
2. Brown, Alvin. *Organization of industry*. New York: Prentice-Hall, 1947.
3. Davis, R. C. *Industrial organization and management*. New York: Harper, 1940.
4. Firey, W. Informal organization and the theory of schism. *American Sociological Review*, 1948, **13**, 15-24.
5. Hemphill, J. K. Situational factors in leadership. *Bureau of Educational Research Monographs*, 1949, No. 31. Columbus: Ohio State Univ.
6. Homans, G. C. A conceptual scheme for the study of social organization. *American Sociological Review*, 1947, **12**, 13-26.
7. Jucius, M. J. *Personnel management*. Homewood, Ill.: Irwin, 1947.
8. Krech, D., & Crutchfield, R. S. *Theory and problems of social psychology*. New York: McGraw-Hill, 1948.
9. Lewin, K., Lippitt, R., & Escalona, Sibylle Korsch. Studies in topological and vector psychology I. *University of Iowa Studies in Child Welfare*, 1940, **15**, No. 3.
10. Moreno, J. L. *Who shall survive?* Washington: Nervous and Mental Diseases Publishing Company, 1934.
11. Pigors, P. *Leadership or domination*. Boston: Houghton Mifflin, 1935.
12. Roethlisberger, F. J., & Dickson, W. J. *Management and the worker*. Cambridge: Harvard Univ. Press, 1939.
13. Shartle, C. L. Leadership and executive performance. *Personnel*, 1949, **25**, 370-380.
14. Simon, H. A. *Administrative behavior*. New York: Macmillan, 1947.
15. Smith, M. Social situation, social behavior, social group. *Psychological Review*, 1945, **52**, 224-229.
16. Stogdill, R. M., & Shartle, C. L. Methods for determining patterns of leadership behavior in relation to organization structure and objectives. *Journal of Applied Psychology*, 1948, **32**, 286-291.
17. Wilson, L. Sociography of groups. In Gurvitch, G., & Moore, W. E. (Eds.), *Twentieth century sociology*. New York: Philosophical Library, 1945. Pp. 139-171.
18. Znaniecki, F. Social organization and institutions. In Gurvitch, G., & Moore, W. E. (Eds.), *Twentieth century sociology*. New York: Philosophical Library, 1945. Pp. 172-217.

## 5

### Freudian Concepts of Group Relations

Saul Scheidlinger

#### The Meaning of Behavior

Freudian psychoanalysis views mental phenomena as resultants of two interacting groups of forces. These are the biopsychic drives (libido and aggressive), and the impressions reaching the organism from the environment. Stimuli coming either from within the individual, or from without, will cause states of tension. The organism seeks to re-establish its previous level of psychobiological equilibrium by discharging the excess tension through activity. There are, however, counterforces within the individual or in the environment—psychological barriers—which tend to interfere with such immediate release. According to Freudian psychology, the interaction between the impulses toward the discharge of tensions and the forces which tend to inhibit or delay (the demands of the outer reality world and internalized standards of conduct) is at the basis of mental activity.

From the standpoint of the individual, behavior represents the optimum solution he has been able to achieve between inner drives and needs, and inhibitory forces. Human life is characterized by inevitable frustrations and conflicts. The latter might occur between intrapsychic strivings and the social reality. At other times conflicts between opposing inner needs might be predominant. Thus behavior in response to any particular stimulus is influenced by a multiplicity of factors. Using psychoanalytic terminology, behavior represents the ego's attempt at reaching at least a truce among the id forces, the reality of the physical and social environment, and the superego. Healthy growth of the individual calls for a strengthening of the ego to the point where it can synthesize the aims of the drives, the conscience, and reality. •

From Chapter 6 of the author's book, *Psychoanalysis and group behavior*. New York: W. W. Norton & Co., 1962. Reprinted by permission of the author and publishers.

Following this line of thought, personality refers to the relatively constant characteristic behavior patterns evolved by the individual in the process of living. It is the outcome of the interaction between the basic drives and the inhibiting forces encountered by the organism within the broad limits of the individual's constitutional endowment. If viewed in this manner, personality actually is a function of the ego, of that "part of the organism that handles the communications between the instinctual demands and the external world" (3, 467). Fenichel defines personality (which to him is synonymous with character) as "the ego's habitual modes of adjustment to the external world, the id, and the superego, and the characteristic types of combining these modes with one another" (3, 467).

Personality is a product not only of the current environment, but also of the manifold earlier situations to which the individual has had to adjust. Thus studying a person at any one point of his development becomes a complicated process in psychoanalysis. It involves a consideration both of the *present* behavior patterns (modes of adjustment) in relation to the given environment, and an understanding of *when, why, and how* these patterns originated in the individual's history. A comprehensive diagnosis, then, concerns itself with *dynamic* (horizontal) concepts and *genetic* (vertical) concepts. The *dynamic* concepts in Freudian psychology deal with "the interaction and the conflicts of forces within the individual and with their reaction to the external world, at any given time or during brief time spans." The genetic concepts "describe how any condition under observation has grown out of an individual's past, and extended throughout his total life span" (4, 11). What first appear to be identical items of behavior could, on the basis of historical study of the conduct patterns involved, be shown to be actually related to different causes; for "only the genetic propositions permit us to make perceivable the drives that a behavior detail represents, their direction, their intensity, and their **structural interconnection**" (4, 19).

According to Freudian psychoanalysis, the meaning of behavior described above holds true for all situations, individual and group. In the strictest sense of the word, group behavior is actually the behavior of individuals who are in a special process of social and emotional interaction. There also is no place for the concept of a "group mind" as distinct from the minds of the individual group members. This does not mean, however, that groups are not perceived as psychological wholes, as having dynamic properties, such as organization, structure, ideals, and climate. These arise through the interaction of the individuals composing the group. This aspect has been developed in considerably greater detail by such recent writers as Erikson, Redl, and Slavson.

Inasmuch as there is no dualism between individual and group psychology, many concepts from the Freudian psychology of the individual

have been used by Freud and others to describe individual behavior in group settings.

### **The Biological and Social Orientation of the Freudian Concepts**

Freud's psychological constructs are rooted in biology. He even foresaw a time where future research would cause his purely psychological concepts to be supplanted by biological ones. It has already been noted that to some writers psychoanalysis is rightly a brand of biology. But neither Freud nor his disciples saw any dichotomy between biological and social needs.

Fenichel stated the Freudian position in respect to the relationship between biopsychic and social (cultural) influences in human life. He thought all evidence pointed to the fact that man needed social contact in order to satisfy his basic drives. "Social relations can only 'form individuals' because of a certain biological structure of man. . . ." (2, 139). He found furthermore that although the individual's needs might change with a changing social environment, it could be proven clinically that these would be but differing manifestations of the same old biologically rooted drives. Elsewhere we find: "The instinctual needs are the raw material formed by the social influences; and it is the task of a psychoanalytic sociology to study the details of this shaping. . . . It is experience, that is, the cultural conditions, that transforms potentialities into realities, that shapes the real mental structure of man by forcing his instinctual demands into certain directions, by favoring some of them and blocking others, and even by turning parts of them against the rest" (3, 588).<sup>9</sup>

In this connection, the multiplicity of roles assumed by people in various life situations are resultants of a dynamic interaction between intrapsychic and environmental forces. They represent selected items of behavior which are conditioned by individual needs, as well as by the nature of the particular social (group) setting.

Erikson pointed to the importance of harmonizing the cultural influences with the individual's ego development. For, ". . . the mutual complementation of ethos and ego, of group identity and ego identity, puts a greater common potential at the disposal of both ego synthesis and social organization" (1, 364).

### **The Development of Social Attitudes**

Social attitudes and the ability to relate to others are evolved in the course of personality growth. Although the infant is born into a family which is his first group, he is initially not a real member of this group.



As a matter of fact, the newborn child is believed to have no ego. "The human being becomes a human being (an ego) by entering into inter-relations with other human beings" (2, 139). He has to develop the capacity to perceive his own role and the role of others around him, to give of himself emotionally, and to handle his impulsive strivings. This development proceeds with the growth of the ego from a state of primary narcissism, through identifications by means of introjection and ambivalent object-ties, to real object-love. To a degree, the earlier forms of object-ties such as ambivalences continue to operate even in so-called normal persons.

Social feelings, friendships and affection for others, represent, in line with Freud's theory, aim-inhibited forms of libidinal drives. These, together with the aim-inhibited aggressive drives, characterize family relationships and favor subsequent group formation outside the family. The above transformation of the basic biopsychic needs (love and aggressive) is a product of the social process. It is worth noting here, that according to Murphy, Murphy, and Newcomb, there are apart from the Freudian theory of libido development, "few hypotheses which offer cues to the student of the development of affection and love" (5, 514).

### The Capacity for Group Ties

Individuals tend to transfer attitudes evolved in family living to subsequent group situations. Furthermore, groups—particularly those which involve face-to-face contact and are geared to the meeting of individual needs—are apt to symbolize a family. The leader then, unconsciously represents the parental figure, while the other group members assume the roles of siblings.

The amount and kind of sharing and cooperating with others of which a person is capable is determined to a large extent by his earlier life experiences. Thus subsequent group relationships are influenced by the individual's healthy ego development—for example, his early transition from narcissism to a capacity and desire for real object-ties; the relative absence of anxiety; the successful management of the aggressive impulses and of dependency needs. It goes without saying that specific group factors, the group's composition, climate and norms, might enhance or minimize any or all of the above elements. There are some people who withdraw from group life because of an inability to sustain the effects of the group process—while there are others who tend to endanger the group climate by virtue of their personal pathology. There are even those who use the group to hide their maladjustment from themselves and from others. For the individual, there is some loss of independence and personal identity implied in group "belonging." Giving up personal desires

for the sake of others calls for some capacity to tolerate frustrations, as well as the availability of substitute satisfactions within the group setting.

### Emotional Group Processes

Freud's theory of group formation deals exclusively with the emotional, primarily unconscious elements in this process. According to him, two or more people constitute a psychological group if they have set up the same model-object (leader) or ideals in their superego, or both, and consequently have identified with each other. Redl postulated that group formation occurs also when several individuals have used the same object as a means of relieving similar internal conflicts. Furthermore the leader might be an object of identification on the basis of the group member's love for him, or fear of him—an object of the group member's love or aggressive drives, or both. As a result of these common ties to the leader, all of which might operate together in any one group, the affective bonds among the individuals come into being. Money-Kyrle related group formation to the presence of common symbols of an imaginary family in the individual's unconscious fantasies.

The above formulations admittedly refer only to the deeper, subjective elements in group relations. Thus Fenichel warned that "social psychology is by no means limited to the study of what is going on in individual minds when groups are formed in this way or of how such groups operate; it must likewise face and solve problems of an entirely different nature, namely, not only that of subjective but also of objective groups, of the similar effects that similar external stimuli have on different individuals" (3, 87).

Implicit in Freudian theory is the assumption that all groups have similar dynamics. Crowd phenomena, for example, differ only in degree from stable, highly organized groups. In the former, there is the most susceptibility to suggestion and to forces making for regression, as well as the greatest loss of individual identity.

Freud objected to the explanation of group processes exclusively in terms of suggestibility, as was the trend in most of the sociological writings of his European contemporaries. He posited the concept of libido, in the sense of affective forces of attraction, as the possible motivation in the modification of individual conduct in the group. Further elaborations by others, such as Redl and Slavson, served to broaden the ideas regarding emotional group processes. Thus contagion and interstimulation in group life were related to individual personality factors and specific group circumstances. In this connection, Redl introduced the element of the initiator's act serving as a means of relaxing the inhibitory forces in the

personality (superego) of the followers, in favor of the guiltless expression of desires (id).

In groups, the expression of regressive attitudes or behavior is facilitated. Manifestations of this sort were found to differ in degree according to various factors such as the climate, permanence and emotional lability of the group, as well as its balance, as determined by the major behavior syndromes of its participants and the personalities of its members in general. It should be noted that such regressions are not necessarily considered pathological. On the contrary, they might assume a mental hygiene, and even therapeutic significance. For example, with the relaxation of the inhibiting forces in the personality (superego), repressed infantile impulses might find free expression. These could involve unsatisfied needs for love, aggression, or dependency. If the group climate be permissive, the individual member might experience less anxiety and less of a need to cling unduly to his defensive patterns.

Besides promoting emotional regression, groups can produce many other effects potentially constructive, when properly exploited, furthering personality growth (and even psychotherapy). Among these are:

1. the feeling of belonging and status
2. the protection from real or fantasied threat
3. the enhancement of self-esteem
4. the loosening of the façade of defensive mechanisms and the opportunity for testing these against the reality
5. the proper conditions for sublimating of basic drives
6. the curbing of infantile desires and behavior, and internalization of group standards in exchange for the love and protection received
7. the diverting of undue aggressiveness onto real evils and its use for purposes of self-control and defense

There are, of course, also difficulties inherent in the planful use of group life for purposes of personality growth, and we might touch on some of the major ones here. One encounters, first of all, the danger of promoting too much regression. In addition, there is the problem of offering protection and support, without at the same time fostering undue dependence. Furthermore there is the subtle task of helping specific people without interfering too much with the spontaneous group processes and the needs of others. How can one create the optimum grouping and climate which individuals with personality defects can sustain without adverse effects? There is last, but not least, the complexity involved in following simultaneously individual reactions and the *total* group process, for each one affects the other.

### Cohesive and Divisive Forces

The network of interpersonal relations within a group is characterized by an interplay of positive forces which strengthen group cohesion, and negative ones which tend to weaken it.

The positive bonds consist of identifications of different sorts and of libidinal object-ties, operating together in various degrees of intensity. The identifications most frequently encountered in group relationships are believed to be of the following kinds:

1. "primary" identifications with an admired person (or group)
2. identification with a rival (or group of rivals) whose place is coveted
3. identification with an individual (or group) on the basis of a common object choice, quality, or interest
4. identification with an individual (or group of people) possessing similar etiological needs

There are also the defensive identifications, such as "secondary" identification—to resolve unsatisfactory object-ties—and "identification with the aggressor"—a means of mastering fear. Depending on the regressive elements fostered by a given group and the maturity of the individuals involved, the object-ties might be primarily of the narcissistic, anaclitic, or reality type.

The negative, centrifugal forces in the group comprise various antipathies, resentments, fears, and hates, for the attitudes of group members toward each other and toward the leader are rarely, if ever, purely positive. In every interpersonal tie there is, according to Freud, an admixture of feelings of love and hate, of varying intensities.

In any one group there can thus be distinguished:

1. positive and negative object-ties (love or hate)
2. positive and negative identifications (the former based on admiration, the latter on a fear of the object)
3. positive and negative transferences

The forward movement, and at times even the very existence of the group, is conditioned by the predominance of the positive, unifying forces over the negative, divisive ones.

Insofar as group ties are primarily libidinal in nature, they tend generally to neutralize and counteract the influence of the aggressive impulses appearing in group life. In addition to the modification of aggressiveness through a simultaneous binding with the libidinal impulses, there are a number of other ways in which groups provide outlets for the overflow of hostile feelings and antipathies in their midst. These range from the opportunity for sublimations within the group to displacements onto



real or imagined enemies outside the group. Dictators have been known to employ these mechanisms in a shrewd manner, thus minimizing the threat of internal conflicts. There is also a frequent tendency to displace hostile feelings originally intended for the leader onto others, in order to avoid the painful eventuality of direct conflict with the parental image.

One might list the following major factors which when present enhance group cohesion:

1. the satisfaction of common individual needs for protection, security and affection
2. a predominance of positive affective interpersonal ties
3. shared ideals and interests
4. an atmosphere of equality and justice
5. symbolic group ceremonials and activities
6. common enemies outside of the group

Group cohesion can be endangered by such elements as:

1. the uninhibited expression of drives (sexual or aggressive, or both)
2. undue egocentricity in individuals
3. extreme jealousy and competition
4. excessive negative transference reactions
5. too much frustration accruing from the demands of the leader or the group code

Freud observed that the central cause of group panic is the breakdown of the libidinal group-ties. As long as the latter persist, marked dangers can be withstood; when they are weakened, relatively insignificant threats might become the signal for the group's disintegration.

### The Role of the Leader

In line with Freudian thinking, there are differences in the relationship between the group members and the leader, depending on the character of the group. Thus in groups with an autocratic kind of leadership and in mob phenomena, the leader tends to replace the individual's superego. He assumes the role of a new inner authority and the tie to him is the basic cohesive force. There is little if any sharing of ideals among the members, who regress to states of marked dependence, unquestioning submission, and loss of personal identity. Magical and symbolic processes are encouraged as a substitute for rational thought and action. In democratic groups there is less projection of the individual superego upon the leader and less dependence upon him. Instead, there is more identification (in the ego) with him and opportunity for individualized, at times even critical, responses from the group. The less personal tie to the leader is

counterbalanced by the sharing of common ideals among the members. Faith in the leader is supplemented to a large extent by a faith in the group's ideals and institutions. In the leader's absence these ideals permit **continuation of the group feeling.**

Autocratic leadership is apt to be most successful in establishing itself, or might even be sought out, when people feel threatened and helpless. The time is then ripe for a return to the childish longing for the comfort and protection of the omnipotent parental figure. The price paid by the individual is usually unquestioning obedience and submission to the authority. The tendency toward such regression varies of course with different people, becoming a function of such factors as the extremity of the reality threats and the capacity of the personality to weather these.

Mature leaders are individuals who are sensitive to the needs of the group members and relatively free from personality disturbance. Such individuals would try to achieve personal status as well as group goals without consciously fostering regressive forces within the group for the satisfaction of their personal needs, such as, for example, the undue enhancing of self-esteem or overcoming of inner anxiety and conflict. The assertion of the group member's individuality and self-determination would, under these latter circumstances, tend to be discouraged. It must be emphasized, however, that the above criteria are very general in nature, and in any specific situation should be considered together with the whole range of group influences.

### Individual and Group Factors

Every item of group behavior always comprises two closely related broad sets of factors:

1. *individual personalities* with their genetic and dynamic properties
2. *group elements* such as organization, climate, leadership, which are the products of the dynamic interaction of the group members

It goes without saying that these dynamic interactions can occur on conscious as well as unconscious levels.

Thus the nature of a group's functioning can be due primarily to one or the other above sets of factors, or, more frequently, to a mixture of both. The breakdown of group morale might in one instance be traced to personal pathology in some of the participants. In another instance, a similar or identical result might ensue from disturbing group factors such as an unfavorable climate, inadequate programming, faulty composition, and so on.

### Conflicts between Groups

Intergroup conflicts are on the whole less easily resolved than those within a group. As a matter of fact, they are frequently kindled by displaced negative feelings which arose originally in the course of group living. Thus the lessening of group feeling, of esprit de corps, finds a ready antidote in justified or unjustified conflicts with an out-group. Such conscious awakening of fear and hatred against outsiders as a means of increasing group solidarity has been evoked by those in power, since recorded history. Or, as mentioned earlier, group formation might occur in the first place on the basis of common hatreds.

Solving intergroup conflicts is our world's most thorny problem. According to Freud, long-range measures for combating such conflicts would necessarily involve the creation of ever broader groups, culminating in an international community. If libidinal ties of this sort could be established, there is good reason to believe that they would operate in the same manner as those in smaller groups.

### REFERENCES

1. Erikson, E. H. Ego development and historical change. *The Psychoanalytic Study of the Child*, 1946, 2, 359-396.
2. Fenichel, O. Psychoanalytic remarks on Fromm's book "Escape from Freedom." *The Psychoanalytic Review*, 1944, 31, 133-152.
3. Fenichel, O. *The psychoanalytic theory of neurosis*. New York: W. W. Norton & Co., 1945.
4. Hartmann, H., & Kris, E. The genetic approach in psychoanalysis. *The Psychoanalytic Study of the Child*, 1945, 1, 11-30.
5. Murphy, G., Murphy, Lois B., & Newcomb, T. M. *Experimental social psychology*. New York: Harper, 1937.

## 6

# The Significance of Choice in Human Behavior

Helen Hall Jennings

Within the totality of facts that influence the individual at a given moment is an area which we might designate as the *social space* in which he finds himself. The sense of one's awareness that there are millions of individuals in the world can be as great as all mankind; even, indeed, vastly greater if we consider our indefinite sense of awareness that millions have lived before us and are to follow us. Although such an awareness is now and then present, it usually has, however, little import of personal meaning. But social contact which is direct and touches our lives immediately bears for each individual particular significance. It is within this quite circumscribed area or *social space* that he lives.

One's inner view of this social space would reveal it structured with all the emotional components of his experiences with others at that point in time. The influences within this social space are the particular other individuals of whom he is to a greater or less extent aware. This area is marked out to him, is meaningful in a quite specific sense, but all of it is not equally sharp in its delineations. Within it the individual is attracted and repelled in many directions and is the focus of forces of immediate concern to him. In the same way, he impinges upon the social space of others.

The individual's behavior as it affects and is affected by the behavior of others sets the limits of his social space. Like all behavior, social space is also dynamic: now wide and receptive to the individual, again narrow and unreceptive, resulting in a channeling of the activities of the individual, at times according to his wishes, at times out of accord with them. The individual's happiness and effectiveness are to a degree a product of his interpersonal relationships.

The individuation process as it grows out of repressing, releasing, and



augmenting forces of the social setting works upon the child to make of him an individual contributing more and more to the interaction. No individual is to be found who is not in some degree bound to others. The universe of feeling acts as a basic cohering force allowing no life to remain completely neutral, completely "objective" in respect to other lives. Even in the world of things we feel nearer to those things with which we have experience and are familiar, and we also reject many more of these things. Of all living beings, man is by far the most dependent upon social relationships for his happiness and growth.

Each individual early begins a differentiating process in selective affinity with others. He may approach those who respond to him or whom he wishes would respond to him; he may keep away from those whom he feels he cannot interest or who repel him. This reaching out of the individual to other individuals may be said to be a projection of the self, a seeking for a fulfillment of a need of the individual for other persons to whom he responds, drawing him to them and causing him to want to include them in his life situation. Such a process may be considered at the base of the interpersonal organization we call society. The structure represents directly the sustaining emotional reinforcement of the different members by one another.

In the course of development, each individual comes more and more to be characterized by his inherent preferences. He gradually exerts his preferences towards people and things in ways that are to hold greater significance for himself and others, and his choices are more or less consciously made as he gains awareness and control over them. But the important fact is that he has basic propensities that become stronger in some directions than in others.

The problem, however, appears not simply one of relatively stronger or relatively weaker propensities for behaving in given ways. The individual is now recognized as enormously complex in his organization—not only within his individual organization but as an interacting organism that is not independent of the elements within his life-field and the structure these elements subjectively have for him.

We have the evidence from L. B. Murphy's intensive experimentation on sympathetic behavior that the psychological structure of the field plays a direct role in determining the kind of behavior which takes place in it and in the pattern this behavior will take (11). Every element, social and physical, within the field showed a bearing upon the form taken by sympathetic behavior and even to its presence or absence—not how many others simply, but *what* others are in the field and their relationship to possible sympathizers and their relationship to one another; what physical space they occupy; what they bring to the situation (in the form of patterns of behavior acquired elsewhere); what behavior others are showing

—and not in a quantitative sense, but in the organization existing between the various factors.

Within the life space, the psychological movements—the locomotions, as Lewin (6) puts it—appear to derive from the relation between the states of tension within the person and the valences within his environment, not from tensions within the person alone. That choice is actuated by the same principle is hardly to be questioned. There may be so little valence in the environment corresponding to the tension (referable to an arising need or unfinished purpose) within the individual that choice fails to emerge. Such may be the case in instances of true isolation where the individual appears drawn to no one and no one to him in the life space in which he is.

The individual's propensity or need to relate himself to others describes the social space which will come to be marked out to him in a meaningful way as personally significant. We see individuals seek out one another and we ourselves continually seek out others in the course of day to day living. These others who are sought out are observed to be not just *any* others but to vary according to who is initiating the contact and who are available to receive it. Likewise the degree of rapport enjoyed by the individuals may be observed to vary.

An exploration of individual differences in respect to emotional and social expansiveness should penetrate below the outer observable manifestations of interaction between persons to the actual bases of needs which the individual has for others; it should elicit his full expression for or against contact with those who surround him.

The initial effort to bring a sociometric approach to the problem of interpersonal relations was made by Moreno and the writer in 1931 (9). The sociometric test, devised by Moreno and adapted by the writer for the study of children in a classroom situation, taps the social aspects of the individual's projections. The simplicity of the test, its lack of resemblance to a "test" in the minds of the subjects, and the fact that its results may be utilized to reorganize the functioning of the group according to the structures it uncovers, work in favor of securing the actual network of relationships existing in the population tested because of the fundamental fact that the choices in sociometric testing are always related to the life situation of the subject.

Moreno and the writer first became interested in devising techniques for exploring children's groups when it became apparent that adult institutional groups could not be made therapeutically effective as functional units on the basis of attributes of individual members. Such attributes, however much they might appear to "complement" or "supplement" those of another individual, did not *act* as complementary or supplementary personality factors when the individuals who seemed to possess them

were placed together. In the attempt to discover what was missing it was decided to explore interpersonal phenomena generated by the interaction between individuals who were associating together. Since such a study, it was thought, would be most fruitful if it investigated the psychological organization of groups of individuals of various age levels, the pioneer work was undertaken in a public school.

Moreno ingeniously devised the use of a criterion for uncovering the interpersonal feeling of the children for one another: the criterion of studying in proximity (neighboring seats). A method of measuring group structure resulted which has not yet been surpassed in usefulness for this purpose by other methods. Consideration of the nature of this simple device reveals certain bases for its efficacy and why it is so widely adaptable to various groups.

The sociometric test allows the individual to become an agent in his own behalf, to give his personal feeling for others in the form of choices for functioning with them within the group of which he and they are members. In this regard, he acts in order to remake the collective of which he is a part. Thus, to the subjects, the test is not a "test" at all. The wording of the test for grammar school classes, for example, was as follows:

You are seated now according to directions your teacher has given you. The neighbor who sits beside you is not chosen by you. You are now given the opportunity to choose the boy or girl whom you would like to have sit on either side of you. Write down whom you would like first best; then, whom you would like second best. Look around and make up your mind. Remember that next term your friends you choose now may sit beside you (9, 13).

First administered by Moreno and the writer (9) to the population of Public School 181, Brooklyn, N. Y., under the condition of allowing two choices for studying with others (occupying adjoining seats), the sociometric test there disclosed that the child gains, with increase in age, increasing ability to establish mutual relationships with other individuals to whom he is drawn. The concept of personality which pictures the organization of the individual as moving from the general to the specific, from the undifferentiated to the highly differentiated, was found to have a counterpart in the growth of interpersonal organization of groups of individuals compared from the kindergarten through the eighth grade. In the latter instance, too, the movement is seen to progress from a simple, loosely integrated structure to one of increasingly greater complexity, offering additional evidence on the course of maturation so long known to be characterized by this principle. Freud's theory, also, of the period of latency of sex in childhood was found to be experimentally confirmed by the age points at which cleavage between the sexes appeared in group structure: starting in the fourth grade (about age nine) and lasting well up to the eighth grade classes (about age thirteen), boys choose boys and

girls choose girls, almost to the total exclusion of the opposite sex; then intersexual choices again begin. Racial cleavage also appeared most marked during this period, and the motivations given by the children often reveal racial similarity to be considered an attractive factor in choice. The same trends in results were obtained when the test of the same school was repeated about two years later, after a turnover in population of nearly 50%. The characteristics of children's groups in classroom structure at different age levels was later further substantiated by Criswell's study (3) of three other public schools of New York selected to have a varying percentage composition of Negro-white pupils. Criswell's analysis holds special interest, also, as it represents the first statistical work on measuring racial cleavage and the treatment may be applied to the measurement of other kinds of cleavages. Criswell found that racial cleavage occurs even in kindergarten, mainly because of the withdrawal of the white group from the Negro group; by the fifth grade mutual withdrawal of racial groups becomes consistent. Thus even radically different racial composition in the membership of the classroom does not produce a unique response on the part of one race (colored or white) towards the other, but racial cleavage at whatever age levels it appears is quantitative rather than qualitative, a lessened frequency of positive responses passing between individuals of different race.

As administered to the population of the New York State Training School for Girls, then numbering about 500, under the condition of allowing five choices for living in the same group, the sociometric test, thus defined, was found sufficiently productive to permit an analysis of the whole community so as to further an understanding of the conduct of groups within it (9). Under similar conditions, except for a three-choice allowance, one study (5) of the development of structures within the *same* group, retested at eight-week intervals over a period of two years and seven months, was made in this community. Structure could be seen not as a flat proximity of part to part but as a hierarchical interrelation of parts in which there is interdependence of one part upon another within the developing organization as a whole. Yet, again, the individual's capacity to relate himself to others remained unexplored; because of the nature of the testing technique used, the focus had to be on a structural analysis only.

Sociometric and near-sociometric methods have also been utilized within a battery of other techniques in various investigations. Lippitt's (7) pioneer exploration of psychological climates is in addition important as the first experiment to equate groups by sociometric testing on the basis of interpersonal structure instead of on the basis of individual-member comparability alone. The significant findings thus carry added weight since interpersonal structure as a possible cause of differences between induced "autocratic" and "democratic" atmospheres was considered by equating



the groups on this factor at the start. It is very fortunate that sociometric tests were administered periodically to the clubs in the related work of Lewin, Lippitt, and White. Thus was gained the opportunity to measure the effect of social climate upon the interpersonal structure of groups.

The study of child personality at the seven-year age level by Biber, Murphy, Woodcock, and Black (2) touches on certain aspects of choice. Judgments of "best" girl or boy given by the children appeared rooted in the feelings of the children towards one another rather than related to moralistic considerations. The majority judged to be "best" their particular favorite for eating or playing or both (when asked to name the "best" and "worst" boy and girl and to select individuals with whom they liked to eat or to play), and in no instance was a child nominated as "worst" and also chosen as companion by the same individual.

The first effort to relate choice-structure to various factors, made by Lundberg and Steele (8) in a survey of a rural village, revealed that individuals will spontaneously volunteer, in response to what may appear to be a casual inquiry, dealing for the most part with other matters, information sufficient to provide considerable data on the interpersonal structure of a community. The "choice" data so gathered represent replies to the question, "Who are your best friends in this community, i.e., with whom do you most like to visit 'socially'?" The resulting "friendship" structure shows common church membership to be a factor most clearly associated with the groupings while family relationship and geographic factors do not appear prominent. The groupings were correlated to some extent with socio-economic status, particularly in the case of those showing high socio-economic status. Moreover, increase in socio-economic status correlates with the number of choices received but not with the number of choices made.

In the first intensive, long-range study of influences bearing on attitude changes in a community, Newcomb (12) finds that the specific social relationships of the individual appear as the factors important for prediction. Courses of study appear only slightly related to changes in attitude. His results show, moreover, that attitudes representative of the dominant trends of thought in the community are closely tied up with the kind and direction of social relationships developed in the community and that from the relationships thus disclosed the emergence of leadership can be predicted. Social attitudes hence appear as an important component in interpersonal relationships. This study is also notable because it is the first to demonstrate that even near-sociometric data, i.e., data given by the individual on the basis of hypothetical criteria which are not to be experienced by him and hence are "unreal" data not to be used to alter the individual's situation, reveal crucial information about a community when secured under circumstances which enlist the cooperation of the popula-

tion as a whole. Newcomb used hypothetical choices and "votes" to arrive at such relationships in the Bennington College community. The conditions of his investigation, however, make it appear likely that such near-sociometric data would correlate highly with sociometric data since there is overwhelmingly consistent evidence that the subjects were in this instance deeply motivated by interest in the project itself. Such cooperation, founded upon interest extrinsic to the test itself, may be difficult if not impossible to secure, except in extraordinary circumstances, and particularly when the investigation demands several retests of the same population. It would be worth while to establish for interpersonal data what degree of correlation ordinarily exists between sociometric and near-sociometric data secured from the same population.

In a study of the genetic process of group life among students, based on a recording of their social life and their development of interrelations, Price (13) considers techniques of adapting situations on the college campus so as to foster interpersonal relationships. Although this study did not employ sociometric methods, it provides an analysis of the college campus useful to the sociometric investigator.

In the industrial field the importance of the worker's interpersonal situation for his productivity is no longer open to question. Roethlisberger and Dickson (14) have demonstrated that the factory situation reflects not only the immediate interpersonal setting of the worker in the plant but also his home situation. Compared with such factors, the physical aspects of work become relatively unimportant. The analysis of Whitehead (15), based on experimental findings, points conclusively to the social setting as the crucial variable, within limits of physique and skill, in work effectiveness.

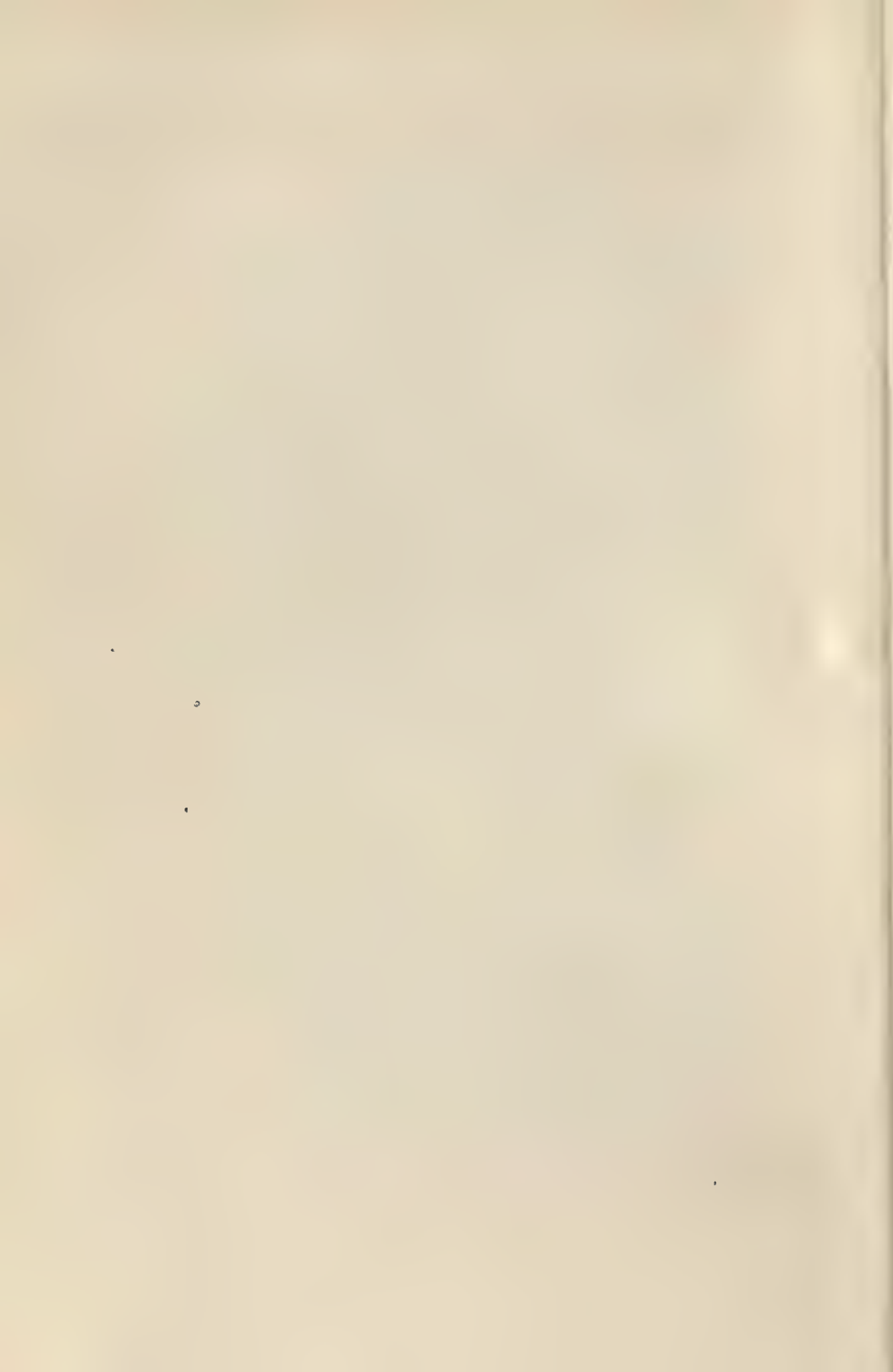
The original work of Barker (1) has demonstrated that interpersonal response should be given study even as it occurs between total strangers. In the first sociometric research of its kind, Barker finds that immediate response between strangers differs significantly from chance just as Moreno and the writer (10) found true of choice made after long acquaintanceship. Moreover, Barker disclosed that such response shows the same tendency to persist noted by Criswell (4) for individuals well acquainted with one another; he noted also that shifting of choices (on later retest) was less frequent for much chosen individuals than for least chosen. His findings further reveal that the individual's reactions to the other persons with whom he is confronted and theirs to him show no correlation on a first meeting, and only the slightest relation on a later occasion after the individuals have had a common group experience.

From its first use by Moreno and the writer, both in public school classes and at Hudson, the sociometric test has focused upon the organization, the psychological structure of groups. Moreno has defined it as "an

instrument to measure the amount of organization shown by social groups" (9, 132). The test has proved well fitted to fulfill the task set for it. It has penetrated beneath the overt manifestations of group life to the invisible network of interrelations on which they are built. Yet the test is so constructed as not to allow a full exploration of the individual's relationships with other individuals. It explores only so far as the form of its construction permits.

## REFERENCES

1. Barker, R. G. The social interrelations of strangers and acquaintances. *Sociometry*, 1942, 5, 169-179.
2. Bibler, Barbara, Murphy, Lois B., Woodcock, Louise P., & Black, Irma S. *Child life in school*. New York: E. P. Dutton & Co., 1942.
3. Criswell, Joan H. A sociometric study of race cleavage in the classroom. *Archives of Psychology*, 1939, No. 235.
4. Criswell, Joan H. Social structure revealed in a sociometric retest. *Sociometry*, 1939, 2, 69-75.
5. Jennings, Helen H. Structure of leadership. *Sociometry*, 1937, 1, 99-143.
6. Lewin, K. *Principles of topological psychology*. New York: McGraw-Hill, 1936.
7. Lippitt, R. An experimental study of authoritarian and democratic group atmospheres. *University of Iowa Studies in Child Welfare*, 1940, 16, No. 3, 43-195.
8. Lundberg, G. A., & Steele, M. Social attraction-patterns in a village. *Sociometry*, 1938, 1, 375-419.
9. Moreno, J. L. *Who shall survive? A new approach to the problem of human interrelations*. Collaborator: Jennings, Helen H. Washington: Nervous and Mental Diseases Publishing Co., 1934.
10. Moreno, J. L., & Jennings, Helen H. Statistics of social configurations. *Sociometry*, 1938, 1, 342-374.
11. Murphy, Lois B. *Social behavior and child personality*. New York: Columbia Univ. Press, 1937.
12. Newcomb, T. M. *Personality and social change*. New York: Dryden Press, 1943.
13. Price, Louise. *Creative group work on the campus*. New York: Bureau of Publications, Teachers College, Columbia Univ., 1941.
14. Roethlisberger, F. J., & Dickson, W. J. *Management and the worker*. Cambridge: Harvard Univ. Press, 1939.
15. Whitehead, T. N. *Leadership in a free society*. Cambridge: Harvard Univ. Press, 1936.





**Part Two**

**GROUP COHESIVENESS**



## Group Cohesiveness: Introduction

One of the major perplexities confronting those who want to understand groups and to work with them effectively is how to explain the great differences in "groupness" that distinguish groups from one another. Why is it that the attendance of one group is so irregular as to result in its slow death while the attendance of another group with similar activities and leadership remains high? What makes a group "healthy" so that its members work harder, make more sacrifices for the group, more readily extol its virtues, seem happier together, interact more often, and agree with one another more readily than do the members of a dying organization? Symptoms such as these are observed every day, but an adequate explanation of the nature and origin of group cohesiveness is not readily at hand.

A suggestive aid to thinking about this problem is the designation of two syndromes of symptoms, by analogy to medicine, as "healthy" and "unhealthy." Such a dichotomy, however, provides little understanding of the determinants of group health, nor does it help account for the wide differences of behavior which may exist among members of the same group. How can we account for the fact that a group which for a long time has been barely able to hold its members suddenly becomes more attractive? What factors lie behind the observation of union officials that the solidarity of a group of workers often increases after they have been out on strike? What can account for fluctuations in an athletic team's spirit which seem to be unrelated to wins or losses? What might be the reasons that a club has good participation one year but only indifferent interest the next? And why is it that one Boy Scout attends meetings of his troop spasmodically while a neighbor boy attends the meetings of the same troop regularly and remains an ardent member for years?

A first step toward answering questions like these is to develop descriptive concepts which will refer to reasonably homogeneous phenomena. What do we mean intuitively when we speak of the cohesiveness of a group? A number of meanings quickly come to mind. We think, for example, of a group that has a strong feeling of "we-ness," meaning that the members are more likely to talk in terms of "we" than "I." We think, too, of a group where everyone is friendly or where loyalty to fellow-members

is high. A cohesive group might be characterized as one in which the members all work together for a common goal, or one where everyone is ready to take responsibility for group chores. The willingness to endure pain or frustration for the group is yet another possible indication of its cohesiveness. Finally, we may conceive of a cohesive group as one which its members will defend against external criticism or attack.

All of these characterizations have a degree of reasonableness. A few of them have led to useful operational definitions so that measurements could be made describing the amount of the characteristic present in a given group at a specific time. And, it has been shown that the results of these measurements, under specified conditions, "make sense." For example, in the experiments by White and Lippitt (Chap. 40) on autocratic, democratic, and laissez-faire atmospheres in boys' clubs, several kinds of observations were recorded which might serve as operational definitions of one or another of the intuitive meanings described above. They noted the relative number of remarks in which "we" *vs.* "I" was used by the boys. They also recorded the number of friendly comments, the statements expressing discontent, and the frequency of group-minded remarks. On each of these measures it was found that the groups with an autocratic climate had developed more friction among the members than had those with a democratic atmosphere.

The comparative number of friendship ties existing among the members within different groups has been used by some to measure group cohesiveness. For instance, Festinger, Schachter, and Back (Chap. 16) determined the cohesiveness of the various courts in a housing project by asking the residents to name their friends in the settlement and then determining the proportion that "in-own-court" choices were out of the total number of selections made from the entire community. Dimock also developed a "friendship index" for small groups (4, 118). This is the ratio of the number of selections made within one's club, when each member is asked to name his 10 best friends, divided by the number which could possibly have been chosen from within the club. Both studies show that scores on these measures can be used to differentiate groups which are also unlike in other important respects.

The degree to which the members share the same norms as to how one should behave or what one should believe has sometimes been taken as an indicator of cohesiveness (see, for example, Coch and French in Chap. 19). In another study, French (Chap. 10) found that organized groups were less susceptible to disruption caused by a member's departure from the group than were unorganized groups. This difference might be taken to indicate variations in cohesiveness. The attractiveness of the group was measured in yet another way by Schachter in the laboratory experiment described in Chapter 17. He employed three questions, asking subjects



if they wanted to remain as members in newly formed clubs, how often they wanted the group to meet, and whether they wished to ask others to stay in the group. Here again groups varying on these measures were predictably different on certain other variables.

An ingenious innovation in the measurement of cohesiveness is a picture-projective test developed by Libo (12). The device is based on the assumption that the immediate environment influences the feelings of the members, and that these will, in turn, be reflected in stories written about the pictures while the respondents are in a group meeting. It has been shown that the test distinguishes rather well between subjects who, when subsequently left free to choose, remain in the group and those who leave.

In studies of more enduring groups, like a business firm or a formally organized club, it is usually possible to get measures of such things as absenteeism, turnover, or payment of dues. These have often been used as rough indicators of the degree to which an institution is attractive to its members.

A careful analysis of this sort has been conducted by Mann and Baumgartel (13) who studied the relation between absences and various attitudinal measures of satisfaction among employees of a public utility. They found, in general, statistically significant relations between the average rate of absence within a subpart of the company and the degree of satisfaction among members of that group with respect to supervision, work associates, and the nature of the job. One striking finding that is particularly relevant here has to do with the men's perception of the solidarity of their group. A large proportion (62% for groups of white-collar men) of the members of groups with very low absence rates, indicated on a questionnaire, "Our crew is better than others at sticking together." Only 21% of those in groups with high absence rates gave this response. Similar analyses show that supervisors who strengthen the group by group discussions and group decisions have fewer absences.

The use of these kinds of behavioral indicators of group cohesiveness has one difficulty which should be noted. Absence from a job depends upon a whole variety of determinants, only one of which is attraction to the group. Loss of income or fear of punishment may keep a person coming regularly to work even though the group is relatively unattractive. Also, illness or outside obligations may prevent a person from attending regularly even when the group is highly attractive. If these extraneous factors vary systematically from group to group, they may obscure the expected relation between attractiveness and rate of attendance. Such a situation seems to have existed in the above study among groups of female employees and among highly skilled white-collar workers where no relation was found between absence and the attitudinal measures.

Obviously, several different things are included in these intuitive and

operational descriptions of group cohesiveness. At least three rather different meanings may be distinguished: (a) attraction to the group, including resistance to leaving it; (b) morale, or the level of motivation of the members to attack their tasks with zeal; and (c) coordination of the efforts of members.

It is highly unlikely that a single concept can be developed which adequately contains all three of these meanings. We propose to limit the concept of cohesiveness to refer to the phenomena of attraction to the group. Phenomena related to the level of motivation in the group, we believe, are better treated under the concept of *group goal* (see Part Four). The coordination of efforts in a group is a complex process which may be broken down into such matters as the assignment of functions (Part Six), the exertion of influence (Part Three), and the structural organization of groups (Part Five). All of these properties of groups are important determinants of the "healthy" functioning of groups. It is desirable, however, to employ several different concepts to describe their various aspects.

### Refining the Concept of Cohesiveness

The term *cohesiveness* refers to phenomena which come into existence if, and only if, the group exists. A person must have some notion about the properties of a given group before he can react to it favorably or unfavorably. His attraction to the group will depend upon two sets of conditions: (a) such properties of the group as its goals, programs, size, type of organization, and position in the community; and (b) the needs of the person for affiliation, recognition, security, and other things which can be mediated by groups. Both the nature of the group and the motivational state of the persons involved must be treated in any adequate formulation of group cohesiveness.

It will be recognized that such a formulation is identical with more general conceptions of human motivation which are widely accepted. The valence, or attractiveness, of any object or activity is a function of the needs of the individual and the properties of the object. For example, how attractive a given serving of food will be to a person depends upon how hungry he is and what kind of food it is. In the conception of group cohesiveness proposed here, the group is treated as an object in the life space of the person. Its valence for any given person, then, depends upon the nature and strength of his needs and upon the perceived suitability of the group for satisfying these needs.

With the help of such a formulation several interesting derivations become possible. If, for example, a person joins a group with the expectation

of fulfilling certain personal needs, but these needs change while he is a member, the attractiveness of the group will decrease for him unless the group is able to fulfill the new needs equally well or better. It is possible, of course, for an individual's needs to be modified through experiences in the group. Indeed, some organizations deliberately attempt to change the needs of their members. Such organizations often "lure" members into joining by promising certain inducements, and then work on the member to develop other needs and interests which are considered more important to the group. Just how these conversions of motivation take place, though, is far from clearly understood.

Broad social conditions may modify the needs of large segments of the population more or less simultaneously. When such changes take place, we should expect the attractiveness of certain types of groups to be affected accordingly. Thus, it has been suggested that the postwar increase in church membership and attendance results from popular anxieties and insecurities brought about by the advent of the atomic age.

The formulation of cohesiveness proposed here also implies that any reduction in the ability of the group to meet the needs of a member will decrease the attractiveness of the group for him. Such a change might be brought about by alteration of the group's properties through modifying its program, the nature of its membership, its internal organization, or its emotional atmosphere. By similar reasoning, of course, we should expect the attractiveness of a group to be increased by any changes in the group which enhanced its ability to meet the needs of members.

It should be noted that the ability of a group to meet the desires of an individual may not be totally dependent upon occurrences within the group itself. Any group exists in an environment, and the attributes which a person sees in a given group are determined for him in part by the position of the group in its environment. If, for example, the group has high prestige in the community, it will be seen as having the ability to fulfill needs for status which a group of low prestige does not possess. This is a quality of the group which it derives from sources outside it. Or, the group may provide access to certain ends which are not available to the nonmember. For example, membership in a fraternity may grant an opportunity to develop friendships with girls in a certain sorority which are not as readily available to nonmembers. Here again, the possibility that the group will meet the needs of the person is somewhat determined by the position it has in the surrounding environment.

Assuming, then, that the valence of the group is a function of the individual's needs and the properties of the group, we can briefly summarize with the statement that the attraction to the group is a function of the resultant forces acting on the member to belong to the group. The

*cohesiveness* of a group, thus, is the resultant of all the forces acting on all the members to remain in the group.

### Sources of Attraction to the Group

Why do people join or remain in a group? It is possible to identify two major sources of attraction: (a) the group itself is the object of the need, and (b) being in the group is the means for satisfying needs lying outside the group.

*The group itself is the object of the need.* One of the most obvious reasons for joining a group is that one likes the people who are in it. In some groups this may be the only source of attraction, such as a gathering of neighbors who get together for a "visit" just because they enjoy one another's company, and not necessarily because of the fun of talking or an interest in the topics discussed. More often, however, this attraction to the people who are in the group is present along with interest in the activity, or the programs of the organization. Thus, a man may join a golf club both because he likes the game and because he likes the people he meets there. It is possible, of course, that he could have joined the club only in order to play golf, feeling quite neutral or even having a mild dislike for the *habitudes* of the place.

The group may be the object of the need, then, either because of an attraction to the people or because of a liking for the activities available in the group, or both. An interesting special case arises when we consider the possibility that a person may join a group because he places a high value on its purposes—perhaps on such goals as combating prejudice, getting out the vote, or improving local business practices. Here, the group is attractive only because he feels that the goal of the group is a worthy one. If he comes to believe that they will never achieve this end, perhaps because of inefficiency in the group, poor leadership, friction, lack of money, or any of a number of other reasons, he will become less attracted to it. The valence of a group, when its goals are the primary source of attraction for a member, is equal to the strength of the attractiveness of the group goal, times the probability that the group will reach this goal.

*Group as a means for satisfying needs outside the group.* In many instances a group may be attractive to a person primarily because it is a means to fulfilling some need which exists outside the group. Membership is a path to something desirable in the environment. An important reason for joining a sorority on a university campus, for example, is the prestige that the girls obtain in the college community by belonging to that group, according to findings reported by Willerman and Swanson (17). Similarly, Rose (15) states that the major benefit that the members



say they derive from belonging to a large union "local" is that it obtains higher wages and job security for them. In both of these instances, the member values the group because it helps achieve a goal which exists outside the group.

It has been emphasized by some that a group may become a haven for protection from a threatening environment and thus become a means to satisfy the need for security. Grinker and Spiegel (8) describe the increase in cohesiveness among the members of a bomber crew when they become aware that each person in the plane is dependent upon the others for the security of them all.

The principle of "functional autonomy of motives" proposed by Allport (1) suggests that the distinction between groups as the object and the instrument of need satisfaction is not absolute. Allport has pointed out that certain behavior which was originally instrumental in reaching some further goal may become a goal in itself and persist after the original goal no longer exists. It appears that a similar phenomenon may be found with respect to group membership. A person may join a group in order to achieve some external objective, but remain in the group long after the original objective is no longer relevant. Group membership, which was only instrumental at first, has become an end in itself.

It is reasonable to assume that the nature of the group life will vary with different sources of attraction. The members of a group who are primarily friends, for example, are likely to be more interested in one another as persons, perhaps more supportive of each other, more cordial in interpersonal relations, and so on. A group which is joined because it is a means for a person to obtain social status in a community, such as a "swanky" town club, might have more clique formations within it and more rivalry and prestige-seeking behavior than most groups.

Back (2) provides support for this notion in findings from an investigation in which he created experimental groups on the basis of three different bases of cohesiveness. The differences among the ways in which cohesiveness was produced led to different patterns of communication and influence among the members. When the cohesiveness was based on personal attraction to one another, the members made their discussion a long, pleasant conversation in which they expected to be able to persuade one another easily. When cohesiveness was based on effective performance of the task they were given to do, the members wanted to complete the activity quickly and efficiently, and discussed only those matters which they thought were relevant to achieving their purposes. When cohesiveness was based on the prestige obtainable from membership, the members acted cautiously, concentrated on their own actions, and in general were careful not to risk their status. Finally, with cohesiveness at a minimum (that is with none of the bases of attraction actively operating) the mem-

bers of the pair acted independently and with little consideration for each other.

There is reason to believe that groups should be different to the degree that membership in them is the result of own forces, as compared to membership which occurs because the person is required to join. One can anticipate that a Sunday School class which is attended by children who are eager to be there will be quite different from one in which the scholars are delivered at the door by their parents despite their objections. Although there is little research to support such speculations, Dimock (4, 181) has found that groups in the programs of formal youth agencies are less cohesive than are neighborhood gangs. This may be taken as relevant evidence if it can be assumed that membership in local gangs is more motivated by own forces, and that membership in agency groups results more from induced forces.

### Increasing the Valence of a Group

The general principle may be derived that the valence of a group will be increased by heightening the awareness of a member (or potential member) that he can fulfill his needs by belonging to the group. Since it is considerably more difficult, though not impossible, to change a person's needs, it is more common for organizations to attempt to strengthen various sources of attraction for the membership by dramatizing the value of the group's properties or the gains to be derived from belonging. An organization might increase interest in itself by emphasizing, for example, that many friendly people can be found there, that a strong union means higher wages, that other people envy those who belong, that membership is the shortest route to heaven, that exercise is good for you, that the girls in this "chorus line" are beautiful, and so forth. The frequent use of appeals of this sort indicates that a group can be made more attractive either by making it more need satisfying or by reminding the members that it does satisfy needs. Various rituals carried out by groups seem mainly to serve this latter purpose.

There is very little systematic knowledge about the conditions which heighten cohesiveness, since only a few studies have been aimed directly at this problem. It is possible, nevertheless, to draw certain inferences about these conditions from investigations in which cohesiveness was an incidental part of the research problem. Let us consider first the intrinsic satisfactions of group membership.

The more prestige a person has within a group, or the more it appears that he might obtain, the more will he be attracted to the group. This is one of the conclusions drawn from the study by Kelley described in Chapter 30. He created a prestige hierarchy by giving some members the

authority to tell others what to do and how to do it. He informed some of the higher status persons that they were secure in their jobs, whereas others among the *highs* were told that they might be changed to a lower status later in the experiment. Similarly, some of the *lows* were told that they would not be allowed to rise above their low positions, whereas other *lows* were informed that they might be promoted. Kelley found that the high status job with the implied threat of demotion, and the low status post with the impossibility of promotion, were clearly the most undesirable positions. He also noted that persons who were secure in their high status and those who felt that they might rise in status were most attracted to the rest of the members in the group.

A situation in which the group members are in a cooperative relationship is more attractive than one in which they are competing, according to Deutsch (Chap. 23). He created cooperative classroom groups by telling the members that all would be given the same grade depending upon the quality of their group's product. The competitive groups were informed that each member would be graded on his merits relative to the others in his own class. The cooperative groups displayed many symptoms of high cohesiveness. Compared to the competitive groups, the members liked one another more, made more attempts to influence one another, accepted influence attempts more readily, and were more friendly in their behavior.

Heightened interaction among persons may increase the attractiveness that a group has for its members. This is stated as a hypothesis by Homans (10, 112) in the following terms: "If the frequency of interaction between two or more persons increases, the degree of their liking for one another will increase, and vice versa." Support for this hypothesis appears in the findings of an experimental study by Bovard (Chap. 14). He studied several college classes. Some were led by group-centered teachers, and a comparable number were directed by leader-centered instructors. The members of the group-centered classes liked their fellow members better than did those under the other form of leadership. Bovard interprets this result as due to the greater interaction among the members of the group-centered classes. There is no convincing evidence, however, that interaction which is unpleasant will make persons better like one another. In fact, Festinger and Kelley (5) present data from a housing project which tend to support the opposite conclusion.

Events outside the group can also influence its attractiveness to members. An illustration is provided in an unpublished report by Thibaut and Willerman. A crew of women working in the same room in a garment factory had little to do with one another. They seldom conversed on the job and even ate their lunches in silence. In the course of events they were all given a raise by management. Suddenly they became a different group. Friendly interaction began to occur on the job and their lunches became

social occasions. The cause of this change in interpersonal relations is interpreted by these writers to be the commonality of fate they encountered in having their salaries increased. The group came to be seen as the means whereby they improved their financial condition, and the value of the group as a result was increased for them all.

An increase in cohesiveness because of an attack on the group has commonly been observed. For instance, American-Japanese grouped themselves into strong organizations in the wartime relocation centers studied by Leighton (11), when the administration began to make demands which appeared to threaten things they valued highly. In a similar fashion, a student group may become more tightly knit if outsiders publicly disparage their views.

To summarize, the attractiveness of a group may be increased by making it better serve the needs of people. A group will be more attractive the more it provides status and recognition for its members, the more cooperative the relations, and the freer the interaction. Attack from outside the group may make it more cohesive, too, but so can favorable evaluations of the group by outsiders. When the group is attacked, an increase of cohesiveness apparently occurs if the group is perceived to be a source of security. When the group is favorably evaluated by outsiders, an increase in cohesiveness apparently results from the realization that membership in the group enhances personal prestige.

### Conditions Decreasing the Valence of a Group

The valence of a group will decrease for a person if the needs it has been satisfying are reduced, if it becomes less suitable as a means for satisfying existing needs, or if it acquires distasteful or unpleasant properties. A person will attempt to leave a group when its net attractiveness becomes less than zero, that is, when it becomes negative. He will actually leave only when the forces driving him away from the group are greater than the sum of the forces attracting him to the group plus the restraining forces against leaving.

The balance of forces toward and away from the group appears to be pretty even for many members of many voluntary groups. When the balance is nearly even or when it fluctuates widely over time, the turnover of membership will be great. If the valence favors the negative side for all members, the group will disintegrate, of course, unless withdrawal is prohibited in some way.

From this formulation it may be derived that a member will not take the active step of withdrawing from a group until the resultant force acting upon him is in the direction away from the group. This means that a group may retain its membership indefinitely even though its at-



tractiveness is near or equal to zero. In fact, it is possible to find many groups which survive only because the members have no strong motivation to leave. Needless to say, such groups can exert little influence over their members and can enlist little activity in their behalf.

Persons on the borderline of membership may be pushed over into negative feelings if they are required by the group to accept some duty, to pay larger dues, or if in some other way they come to see that the group is making disagreeable demands. In some cases, where membership is based on a sense of duty, it may be possible to require help or donations without driving such a member away, since the peripheral member may relieve feelings of guilt for having neglected the group. Barring such a special case, however, we may expect that fringe members will be driven out of groups by any unwanted demands upon them. When a group has a large number of such members, a sort of stalemate often results so that no one is asked to do anything for the group out of fear that the group will disintegrate.

This general formulation may be illustrated by reviewing several investigations which indicate some of the reasons that groups develop negative valence for their members.

The attractiveness of a group is lessened when the members disagree over the way to solve a group problem. This is a conclusion drawn by French (Chap. 10) from a study of groups under frustration. He found that some persons walked away from the task when the group was disagreeing, often to sit in a corner and work on a private problem. French notes that this withdrawal is most likely to occur when the members are disagreeing over the method they should use in solving the problem. Festinger *et al.* (6) also report that a member is likely not to be attracted to a group in which he feels that others will probably disagree with his opinions. At the same time, groups of high cohesiveness are likely to be sensitive to small differences of opinion and will try to patch up these differences, according to findings reported by Gerard (7). It appears, then, that groups of high cohesiveness may readily disagree but that they will try to abolish disagreements quickly. When it appears, however, that differences of opinion cannot be reconciled, the cohesiveness of the group will be materially lowered.

The attractiveness of a group may be decreased if one has unpleasant experiences in it. One of the natural resultants of group life is that a member will be asked to assume responsibilities. Some of these, perhaps speechmaking, letter writing, bookkeeping, or leading a discussion, are duties for which he feels he is not adequately prepared. The attractiveness of the group might well be reduced, then, when it is the source of such embarrassment. Horwitz (Chap. 25) reports from a laboratory experiment some incidental observations which illustrate this phenomenon. In this

experiment the members of each group were girls from the same sorority. A group task was assigned and the girls were highly motivated to do well. In the course of the task it became apparent to some of the girls that their own inability to contribute to the group task might prevent the group from doing well. This realization was quite disturbing and made the whole group activity less attractive. In French's experiment on the effects of group frustration (Chap. 10), some of the participants showed evidence of wanting to leave the group when it began to fail. The effects of failure upon the attractiveness of a group are further illustrated in the study of industrial workers reported by Coch and French (Chap. 19). Here it was found that workers whose rate of production fell just below the group standard, so that feelings of failure were intense, had an extremely high rate of turnover.

It has been observed that people may leave a group because they feel that other members are too dominating or that they have some other unpleasant characteristics. Scheidlinger (Chap. 5) asserts that dominating behavior is a frequent cause of group disruption. Fouriezos, Hutt, and Guetzkow (Chap. 24) present supporting evidence when they show that staff conferences in which a high frequency of self-oriented behavior occurs are rated by the members as relatively unsatisfying. Further evidence is provided by Festinger (Chap. 8) from a study of a housing project in which the residents perceived one another as being "low class." In this small community it was extremely difficult to develop a tenants' organization, even with the aid of professional community organizers. Participation in the programs of the residents' council was viewed as possibly lowering one's social status. This was in sharp contrast to another housing project in which the members liked one another and readily formed a project council for fire protection and to meet other mutual needs.

A rather unexpected cause for decrease in group cohesiveness has been reported by Riecken (14). He describes a work camp whose prevailing atmosphere placed a high value on friendly and gentle interactions. In the course of performing daily duties, however, minor antagonisms were bound to arise. Since these campers were members of an association which disapproves of both physical and verbal aggression, they found it difficult to raise problems in which some person or a subgroup was at fault. These problems, when discussed in staff meetings, were usually handled in an abstract and intellectual fashion and few of the resultant decisions were carried through. Typically, a member apologized for bringing up the problem and stated that he did not mean to blame anyone for the state of affairs. The resulting condition amounted, consequently, to a failure of communication on important matters, and antagonisms continued much to the unhappiness of all. Quite different kinds of barriers to communication can occur, but with similar results. For example, in an international

conference the cohesiveness of the group may be strongly affected by the presence of language differences, or groups working at noisy machines may be less cohesive than those working at quiet tasks where the members can easily converse while working.

The negative evaluation placed upon membership in a group by people in the surrounding community can also make the group unattractive to its members. Groups which, as groups, have low status find it necessary to make special efforts to keep their members attracted. Warner *et al.* (16), Davis *et al.* (3), and many others have described the pressures on minority group members to "pass" into the majority when their physical characteristics, or other cues used to designate them, make this escape possible. The strong urge for upward-mobility in America seems also to produce many shifts in group membership as these become possible for particular individuals. This phenomenon is illustrated by the boy from a lower socio-economic level who went to college and then assiduously avoided relationships with his precollege friends for fear that they would endanger his new status.

The competition among groups for members provides a final reason that members may wish to leave a group. A member of a church may resign and join another in the same community. Or, a parent may switch from one child-study club to another. It is important to note, however, that all new memberships do not cause an individual to give up old ones. We need only to mention those inveterate joiners who add memberships to their list in much the same way that a Boy Scout collects merit badges. Under what conditions will the entrance into a new group cause one to depart from an earlier one? Two conditions may be noted: (a) The second group appears better able to satisfy the needs of the individual, and he has a limited supply of time or energy available for participation; and (b) the standards of the second group are in conflict with those of the first. In this latter case, a group may even specify in its membership requirements that a person shall not belong to certain other groups.

### The Formation of Splinter Groups

Historical accounts of man's organized efforts frequently describe the formation of small bodies which leave the original association to become the supporters of their own program. Examples may be easily found in the history of religious movements, political parties, and "schools of thought." It is not without significance that these splinterings have tended to appear more often in groups which have had strong value or ideological orientations than in those without such leanings. The discussions by Festinger (Chap. 15), Festinger, Schachter, and Back (Chap. 16), and Schachter (Chap. 17), describe situations which lead groups to reject

members holding deviant ideas with the unintended result that they create conditions conducive to the formation of competing groups. At this point, however, we shall concentrate our attention on subgroups which take themselves out of the parent body, rather than being dismissed by it.

In his observations of a Japanese relocation center in this country, Leighton (11) noted the formation of subgroups within the camp when a stressful situation arose. His explanation for the development of these small bodies (within the larger organization) is that the earlier modes of behavior, originally established in their home environment, could not be used in this unusual situation. The crisis thus demanded forms of behavior for which there were no already established norms. As a result, a new social organization was created among the inmates, and subgroups coalesced around different and conflicting answers to the problems facing them. The seemingly placid camp suddenly became a collection of opposing factions.

Subgroups also occurred in the experiments on different styles of leadership described by White and Lippitt (Chap. 40). It was found that the boys' clubs were more likely to disrupt into in-group and out-group under the authoritarian style of leadership, than under the democratic style, presumably because the hostile tensions created by the restrictive leadership could not be relieved through aggression against an adult. The members were consequently forced to release their tensions by attacking a subgroup.

In all of these examples the boundaries of the group are redefined by the members. Certain persons within the total membership are seen as more likely to gratify one another's needs than is the total organization and a new group is formed for that purpose. Since an embryonic splinter group is only an idea before it is a reality, it can have few group properties other than its goals with which to attract recruits. These factions are therefore likely to be primarily concerned with defining "social reality," i.e., with ideological or value difference. As was noted earlier, they are most likely to occur in bodies which place great importance on ideas.

It seems reasonable to assume that the tendency to break apart would be more likely, the larger the group. Some data supporting this assumption are reported by Hare (Chap. 34). He finds that discussion groups of 12 members are more likely to fall into small, often conflicting, subgroups than are those with six members. The conditions of the experiment, however, did not allow these to develop into overt, opposing factions.

It is not necessarily true that splinter groups tend to disrupt the larger organization. It may be that they actually increase the attractiveness of the larger body. Consider, for example, a department within a large company where membership on the department's bowling team, or a luncheon



group, may become very attractive to an individual. The satisfaction thus derived may be generalized to warm approval of the whole company. Or, pride in one's military squad may lead to pride in the larger military organization. When does subgrouping tend to weaken the whole and when does it tend to strengthen it?

We suggest that splinter-group formation will disrupt the larger organization when the goals of the smaller group are incompatible with those of the larger. In contrast, they will strengthen the cohesiveness of the total when the goals of the smaller group are the same as, or supportive of, the larger body's goals. An illustration is the formation of a club within a church. Let us assume that it becomes critical of the values upheld by the congregation. It would be assumed that the ardent members of this club would find the church less attractive and the club much more appealing. If sufficiently dissatisfied they might even leave the church and hold their meetings elsewhere. If, however, the objectives of the club are the same as those of the church, the members would presumably develop increased attractiveness both to the church and to the club.

Although such conjectures as these appear reasonable, it should be emphasized that there has been only the most meager descriptive beginning in the study of splinter-group formation. Obviously, there is much yet to be learned regarding these matters.

### Some Questions about the Concept of Cohesiveness

The cohesiveness of a group as conceived here is determined by the attractiveness of the group to its members. Any given group, of course, may have both attractive and repelling features, and its cohesiveness must refer to the resultant of these opposing forces. While this formulation helps in the treatment of many important group phenomena, it leaves unsettled several more specific problems. Some of these have been raised by Gross and Martin (9) in a critique of the concept of cohesiveness.

*What difference does the source of attraction make?* The cohesiveness of any given group is the resultant of many distinguishable forces toward and away from the group. We have seen that the attractiveness of a group may derive from several sources such as the attractiveness of the members as persons, of the activities of the group, or of ends mediated by the group. Is there some common denominator among these so that one can hope to obtain consistent relations between a given amount of cohesiveness (regardless of its specific sources) and other properties of the group, or must the various sources of attraction always be isolated and measured separately? •

In order to answer this question with finality, further research is needed. The best evidence bearing directly on this problem is provided

by Back (2), whose findings tend to support the conclusion that different sources of attraction do have certain similar consequences. In his experiment, it will be recalled, groups were established on three bases: personal attraction, task attraction, and possible prestige gains from membership. The strength of attraction for each basis was varied. The conclusions were that the style of communication and influence was different for each source of attraction but that a similar increase of attraction on each basis led to a similar increase in the power of the group to influence its members. With respect to *power to influence*, then, it appears probable that different sources of attraction have the same effect.

*Do the attractions from different sources add up to increase total attractiveness?* Back has shown that, for three separate bases of attraction, increasing the attractiveness of a group does increase the power that the group has over the member, but he has not demonstrated that the presence of more than one source of attraction in the same person gives the group more power than when only one source is present. Essentially the same problem may be stated in a different way: If the attraction to the group's activities is equal in two groups, will one of them have greater cohesiveness if in addition its members are more attractive? We should expect that the addition of attractions from different sources would actually increase the total attractiveness of the group for an individual, but systematic research has yet to establish the fact.

*How should the several individual scores of attraction to the group be combined to form a single value of cohesiveness?* Even after we achieve a satisfactory method for determining an individual's resultant attraction to the group, there remains the problem of combining individual scores into an index of group cohesiveness. The simplest formulation of group cohesiveness would be that it equals the sum of the resultant forces on members to remain in the group. Each member would be given equal weight. A formulation essentially of this type has been used in most of the research conducted up to the present, and on the whole it has proved satisfactory. There can hardly be any doubt, however, that the degree to which certain members are attracted to the group makes a critical difference, while the degree of attraction of other members is relatively inconsequential to the group. Only further research can determine the most satisfactory method for relating individual attraction scores to an index of group cohesiveness.

### Overview of Research Reported in this Section

Relatively few systematic studies have been conducted with the purpose of determining the factors increasing or decreasing group cohesiveness. It has been much more customary to view cohesiveness as the cause of other

properties of groups. The three studies included in this section illustrate some of the beginnings which have been made toward understanding the conditions that influence group cohesiveness.

The first selection is by Festinger (Chap. 8), in which he summarizes data from several studies of housing projects. In these investigations, he and his co-workers were interested in the factors leading to the formation of groups, and the causes of increased or decreased attractiveness of these groups for their members. It was found that the distance one lived from others in the project, and the fortuitous arrangement of sidewalks, mail-boxes, stairways, and other similar matters which controlled one's likelihood of having contact with others, were important determinants of the persons with whom one made friends and thus of the formation of social groups. It was also found that when these neighborhood groups fulfilled the needs of the members they were more cohesive than when they did not. Those people who had more satisfactory group memberships were also more satisfied with other aspects of community life. Further effects of high and low cohesiveness in this same housing project are described more fully by Festinger, Schachter and Back in Chapter 16.

Thibaut attempts to show in Chapter 9 that the valence of activities which a group is allowed or forced to engage in affects the attractiveness of sharing membership in the group with others, that interteam hostilities which develop where two teams are forced to interact on a basis of unequal status significantly affect the attractiveness of sharing membership with others, and that peripheral members are more susceptible than central members to influences tending to produce changes in interpersonal affiliations. In a laboratory experiment, he made the environment threatening and unpleasant for half of the boys playing games together in a large room, while he treated the others in a supportive and pleasant manner. For the former boys the group was a means only to discomfort and degradation. For the latter it was a means to satisfactory treatment and appreciation. Late in the experimental session, half of the groups which were accorded the disagreeable treatment were allowed to improve their lot at their own request, whereas the rest were not allowed to change. He reports that the groups with the sudden improvement of status did not increase in cohesiveness. The groups, however, which were favorably treated throughout the entire session did increase in cohesiveness. Central members in those underprivileged groups which were denied promotion also displayed an increase in attraction to the group. Thibaut explains these results in terms of the hostile feelings which are built up during the experimental session and which apparently get released through the catharsis afforded by the communication of aggression when the conditions favor this type of communication. Kelley, in Chapter 30, suggests additional hypotheses to account for both his own and Thibaut's results.

Finally, French reports in Chapter 10 a pioneering experiment on the nature of the forces which lead groups to disrupt. He compared a number of well-organized and a comparable number of newly-created groups on their reactions to frustrating group problems. The tasks given them were all extremely difficult. Some could be solved by individual effort without regard for the rest of the group, and others could be solved only by close group coordination at every step. Subjects were allowed to choose the task they preferred. Quarrels and disagreements broke out more readily in the organized groups both in choosing a proper task and methods of solving it. The disruptions in these groups, however, were less damaging to the group than in the newly-created groups. The organized groups also showed more social feeling, more we-feeling, motivation, interdependence, frustration, and equality of participation. French interprets these findings by pointing out that the organized groups, due to previous association, had stronger group goals and more we-feeling than the unorganized groups. Because of this additional motivation, they were more keenly frustrated when they were unable to solve the problems. This frustration led to greater aggression within the group. Because they were more cohesive, however, the organized groups were less likely to split up.

In a further discussion of these data, French states that the disruption of any group can be explained in terms of the balance between cohesive and disruptive forces. Usually the disruptive forces will result from the conflict among members concerning each individual's own goals and the means of achieving these goals. Other disruptive forces may derive from such matters as rivalry for status, and interpersonal hostilities. With the aid of diagrams and concepts from psychological field theory, he diagnoses the more detailed nature of cohesive and disruptive forces.

The concept of group cohesiveness will be found throughout this book. In theories of group dynamics it serves both as an independent and as a dependent variable. Cohesiveness exerts influence on other variables, and it is influenced by them. In this section, our attention is focused on the conditions that affect cohesiveness. In subsequent sections, especially those dealing with group pressures and group standards and with group goals and group locomotion, we shall examine the consequences of cohesiveness. The decision to include a particular study in one section or another is to some degree arbitrary. The decision is especially difficult with respect to experimental studies of the consequences of different degrees of cohesiveness, since an experimenter must have a practical knowledge of at least some of the determinants of cohesiveness before he can vary it dependably. Despite these difficulties of classifying studies, it is clear that the bulk of the systematic research on cohesiveness has, to date, been more concerned with its consequences than with its determinants. The theoretic-



cal and practical importance of cohesiveness as a determinant of other group properties is now well established. Future research should, therefore, deal increasingly with those conditions which influence cohesiveness itself.

## REFERENCES

1. Allport, G. W. *Personality: A psychological interpretation*. New York: Holt, 1937.
2. Back, K. W. Influence through social communication. *Journal of Abnormal and Social Psychology*, 1951, **46**, 9-23.
3. Davis, A., Gardner, B. B., & Gardner, M. R. *Deep South: A social and anthropological study of caste and class*. Chicago: Univ. Chicago Press, 1941.
4. Dimock, H. *Rediscovering the adolescent*. New York: Association Press, 1937.
5. Festinger, L., & Kelley, H. H. *Changing attitudes through social contact*. Ann Arbor, Mich.: Research Center for Group Dynamics, 1951.
6. Festinger, L., Gerard, H. B., Hymovitch, B., Kelley, H. H., & Raven, B. The influence process in the presence of extreme deviates. *Human Relations*, **5**, 327-346.
7. Gerard, H. B. The anchorage of opinions in face-to-face groups. *Human Relations* (in press).
8. Grinker, R. R., & Spiegel, J. P. *Men under stress*. Philadelphia: Blakiston, 1945.
9. Gross, N., & Martin, W. E. On group cohesiveness. *American Journal of Sociology*, 1952, **57**, 546-553.
10. Homans, G. C. *The human group*. New York: Harcourt, Brace, 1950.
11. Leighton, A. *The governing of men*. Princeton: Princeton Univ. Press, 1945.
12. Libo, L. *The cohesiveness of groups*. Ann Arbor, Mich.: Research Center for Group Dynamics, 1953.
13. Mann, E., & Baumgartel, H. *Absences and employee attitudes in an electric power company*. Ann Arbor, Mich.: Survey Research Center, 1952.
14. Riecken, H. W. Some problems of consensus development. *Rural Sociology*, 1952, **17**, 245-252.
15. Rose, A. M. *Union solidarity*. Minneapolis: Univ. Minnesota Press, 1952.
16. Warner, W. L., Junker, B., & Adams, W. A. *Color and human nature*. Washington: American Council on Education, 1942.
17. Willerman, B., & Swanson, L. Group prestige in voluntary organizations. *Human Relations* (in press).

## 8

# Group Attraction and Membership

Leon Festinger

A significant aspect of our society is that persons desire membership in groups. It is extremely rare to find a person who does not seek such membership and is content to live with a minimum of social contact with other people. It is more common to find people with membership in a wide variety of different kinds of groups, both formal and informal.

The process of entering and leaving groups is a continuing one for most people. The small informal social groups to which they belong change their membership; some friends drift away and new ones are made; a person will leave a club and, perhaps, join a different one.

To understand the significance of acquiring group memberships and of belonging to groups, it is first necessary to understand why people seek membership in groups.

### Sources of Attraction to Groups

Social life, interpersonal relationships, and membership in groups are important aspects of persons' lives because so many goals and satisfactions are attainable most easily in groups, and in some cases, only through association with other people. The multitude of attractions which draw people into groups and into associations with others may be conveniently summarized under three general headings:

*Groups frequently mediate the attainment of important individual goals.* This source of attraction is recognized by groups and used to attract members. Along these lines, a club will offer different facilities for use only by recognized members. While the overt use of such attractions is generally available only to organized, formal groups, informal groups also frequently attract members because of the goals which they mediate. Thus, a person who seeks to be regarded as "upper class," for example,

Condensed from an article by the same author entitled *Architecture and Group Membership*, in *Journal of Social Issues*, 1951, 7, 152-163. Printed here by permission of the author and The Society for the Psychological Study of Social Issues.

will be strongly attracted to associations whose members are regarded as having such status. By establishing such associations he then may achieve the goal of being himself included in this category.

It is, of course, unlikely that any social group has the mediation of goals as its sole attraction. Yet the mediation of goals should be separated from the other attractions for a number of reasons. First, the attraction of group membership is not so much in sheer belonging, but rather in attaining something by means of this membership. With some types of goals, the attraction to the group may cease once the goal is attained. Secondly, with respect to such sources of attraction, a specific group is rarely indispensable. There will generally be other, perhaps more difficult, means of attaining these goals. Thus the group, on both these counts, holds its members on a rather tenuous basis to the extent that the mediation of personal goals is the source of attraction.

*The activities in which the group engages are frequently attractive to the member.* Many groups form simply on the basis of a common activity which the members like to engage in, and the attraction to this activity may remain one of the major sources of attraction to the group. Thus both formal and informal groups will form to play bridge, tennis, poker, to discuss books or political issues, to have parties and dances, and so on. Here again, it is rare to find a group where this would be the sole source of attraction. Other sources of attraction will also be present, but it seems worth while to distinguish this one from the others on a theoretical basis.

Generally, no single group to which a person may belong has relevance for every aspect of his life. A group such as the family has a relatively wide realm of relevance. At the other extreme, groups with exceptionally narrow realms of relevance depend primarily on the activities in which they engage to attract and hold their members. In general, the realms of relevance of such groups are identical with the activities which are the source of attraction to the group. To the extent that this is true, the group may have relatively little importance in the lives of its members.

*Almost all groups are, at least in part, attractive because people have needs that can be satisfied only by personal relationships with other people.* Some of these needs are friendship, approval and support from other persons, respect and prestige from those with whom one associates, and the like. We are undoubtedly not yet aware of all the personal needs that fall into this general category, nor are we aware of why such needs exist and why they are as powerful as they seem to be. There is no question, however, that they are powerful motivators of human behavior. Since satisfaction of these needs can only occur in the course of personal associations with others, belonging to groups which offer the possibility of satisfying them is virtually a necessity for most humans. Indeed, the

state of loneliness, of not knowing other people and having no close personal relationships, is a state of extreme psychological hardship.

### *The Process of Entering and Leaving Groups*

Having examined the attractions to groups, we may now look at the process by which people enter and leave groups and the circumstances under which such movement takes place. It is obvious that a person will attempt to move into groups which offer the possibility of satisfying his particular needs. It is also clear that persons will attempt to move out of groups which no longer satisfy their needs, or whose negative aspects outweigh the positive satisfactions of belonging to the group. Disapproval by other members, low status in the group, and other such states of affairs can produce pressure to leave the group.

Moving out of one group and into some other one is, however, not an entirely unrestricted matter. While there are some groups out of which one may move at will and some groups into which one may move with relatively little difficulty, most groups exert some restraints against their members' leaving and many groups exert even greater restraints against new members' entering. Formal, organized groups frequently have rules governing the admission of new members. Informal groups also have such rules which, although not formalized, are frequently even more restrictive. An additional difficulty in entering some informal groups is the lack of an easy way of making contact with the group.

We have then the simultaneous existence of forces tending to move people in and out of groups and forces restraining such movement. Groups differ in their attraction for members, and members differ in how satisfying the group membership is for them.

### **Some Determinants of Group Formation**

In our discussion of entering and leaving groups we have omitted one major aspect, namely, involuntary membership in groups. Many group memberships are involuntary. One is born into a certain family and ethnic group, and, be it satisfactory or not, one remains a member.

Living in a home also means involuntary membership in a group. The decisions of the architect in designing the house, in laying out the site plan for a group of houses, and in deciding who will live in the houses determine to a large extent the nature of the group memberships which will be imposed upon the residents of the houses. When a person moves into a house, his social life and the group membership that will be attributed to him by outsiders will already have been determined to some extent by these decisions.



Even within the general community in which he lives and with which he is identified by other people, the specific site plan of the group of houses in which his own is located further affects the amount and nature of his social contacts. To illustrate these effects, let us refer to a number of empirical studies.

A study of group formation (1) was conducted in a housing project built by the Massachusetts Institute of Technology for occupancy by married veteran students. The development consisted of 100 single or semi-attached small houses arranged in courts consisting of from eight to thirteen houses. Each court was a U-shaped affair with the houses facing into a grassy area; the open end of each U faced onto a street which bisected the housing project. The project was rather unusual in that a great degree of homogeneity existed among the residents, who were all married veteran students at M.I.T. There was no freedom of choice of dwelling unit within the project, since all were assigned to houses in the order in which their names appeared on the waiting list. The study in question began soon after the project was fully occupied and, consequently, was able to trace the development of friendships and informal social groups quite thoroughly.

It is a fair summary to say that two major factors affecting the friendships which developed were (a) sheer distance between houses and (b) the direction in which a house faced. Friendships developed more frequently between next-door neighbors, less frequently between people whose houses were separated by another house, and so on. As the distance between houses increased, the number of friendships fell off so rapidly that it was rare to find a friendship between persons who lived in houses that were separated by more than four or five other houses. People also tended to make friends with those whose houses faced their own. Because of the arrangement of the courts in the housing project, these two factors combined to make it easy for social groups to develop within the court and difficult for social groups to develop on any other basis. Each court in the project became a more or less cohesive group with a social life of its own. The relatively little social contact that did exist between one court and another was almost entirely limited to contact between adjacent courts. Because of the design of the project the social groups which developed were determined by the order in which the names happened to appear on the waiting list.

There were instances in which the site plan of the project had more profound effects than merely to determine with whom one associated. Indeed, on occasion the arrangement of the houses severely limited the social life of their occupants. It will be recalled that the open end of the U of each court faced a street which bisected the project. In order to have the street appear "lived on," 10 of the houses near the street had been

turned so that they faced the street rather than the court area like the other houses. This apparently small change in the direction in which a house faced had a considerable effect on the lives of the people who, by accident, happened to occupy these end houses. They had less than half as many friends in the project as did those whose houses faced the court area. The consistency of this finding left no doubt that the turning of these houses toward the street had made involuntary social isolates out of the persons who lived in them.

The same study investigated the development of social groups in an adjoining project that was also maintained for married veteran students of the same school. This project consisted of 13 apartment buildings with 10 apartments in each building. Each building had two floors with five apartments in a row on each floor. The same types of effects of architecture on friendship formation were found here. Once more, sheer physical distance between apartments within the same building was a major factor determining which friendships developed. Needless to say, there were relatively few friendships between residents of different floors of the same building, and even fewer between residents of different buildings. Even along the same floor of the same building, the number of friendships decreased rapidly as one went from adjoining apartments to apartments separated by one, two, or three others.

Again, slight architectural features had important effects on the social life of the apartment residents. The positions of the stairways leading to the second floor enabled the residents of some apartments to make more friends, while leaving other apartments in relative social isolation. The position of the mailboxes in each building added to the social life of the residents of the apartment near which they were located. The social activity of some residents and the relative social isolation of others could largely be traced to such minor architectural features.

Since such group memberships have much to do with how people behave toward each other, and since these group memberships are potential sources of satisfaction for many important needs, it is important that groups formed on a relatively involuntary basis be satisfying ones. If a group which one can easily leave is unsatisfying, one may find another group which provides more satisfaction. But one cannot easily avoid the group memberships that come with residence in a specific location unless one is prepared to suffer relative social isolation. Social isolation or continued group membership of an unsatisfying sort can seriously affect the total context within which the person lives.

### *An Example of Satisfying Group Membership*

The previously mentioned study by Festinger, Schachter and Back, in addition to investigating the determinants of group formation, concerned

itself with the social life of the residents. It was clear that the group memberships provided in the housing community were satisfying ones for the residents. This may have been because of the homogeneity and common interests of the residents; it may have been affected by the temporary nature of residence in the project and perhaps by other factors. Whatever the basis for this satisfactory group life, we have here an example of involuntary group membership which does provide the satisfactions generally desired of group membership. Let us examine the results of this state of affairs.

*Social and emotional aspects of living in the project.* One of the most prominent aspects of life in Westgate was the ease with which friendships formed. Most people remarked about it in the interviews, emphasizing that it was one of the most satisfactory aspects of living there. On the whole, they felt it was easy to make friends, that the friendships they had made would probably be lasting ones, and that the resulting social life was satisfactory. The following comments from Westgate residents are typical: "There are wonderful people in this court. We have a lot of social life and do almost everything together." "We don't very often go out of Westgate for amusements. Almost all of our friends are here, and there is really so much to do here."

About two-thirds of the residents reported that their social life was entirely or primarily within the Westgate community. More than 90% of the residents felt that they had enough friends in Westgate and had as much social life as they wanted.

There were several consequences of this. The most prominent was a general satisfaction with the homes and with living in the community. Only one or two residents expressed any desire to leave Westgate and live elsewhere. More than half of the residents were vigorous in their statements that they would not consider leaving Westgate at all.

This general satisfaction existed in spite of, and seemed to compensate for, many physical inadequacies of the houses. At the time of our study there were many physical nuisances in the houses. Some were incompletely equipped, the grounds were muddy and had not yet been landscaped, the houses were difficult to heat in the winter, and the like. One example of the reaction to such physical inadequacies will suffice, however, to illustrate the point. At the time of the investigation many of the houses had trouble with the roofs. The houses were prefabricated, and many of the roofs had not been assembled properly. All the roofs have since been fixed, but in the interviews about one-third of the residents reported that the roofs leaked. A moderately strong wind would apparently raise the roof slightly, and any rain which accompanied it would pour down the walls. One family reported that in a particularly strong rain the roof had started to blow off; the husband had to go outside and hold the roof down until the wind subsided.

It is remarkable, however, that even such serious physical inconveniences did not create a strong impression on the residents. Typically the reaction was, "Oh yes, there are many things wrong with these houses, but we love it here and wouldn't want to move."

The adequate and satisfying social life was sufficient to override many inconveniences. The result was a rather happy social and psychological existence. The phenomenon may perhaps best be summed up by the expression that many of the people in Westgate used: "We're all in the same boat."

*Group action in the community.* There are grounds for believing that successful community action is possible only under conditions like those found in Westgate where there is considerable identification with the community, where people find satisfying social life and want to continue to belong to the community.

One late afternoon an unoccupied building adjoining Westgate caught fire and burned down. Sparks fell on some of the closer Westgate houses, and there was much concern about the fire spreading to the project. That evening a group of tenants made plans for starting a tenant organization which would try to obtain more adequate fire protection. Once started, the tenant organization also dealt with many other aspects of life in the project, including social activities. A tenant council of representatives from each of the courts in Westgate was established, and this council continued to function fairly successfully. This spontaneous beginning of a community organization which received enough active support in the community to enable its continued successful functioning in a number of activities is rather unusual, considering the difficulty of starting such community activities in other situations.

### *An Example of Unsatisfactory Group Membership*

A government project built for shipyard workers in 1942 was studied by Festinger and Kelley (2). It illustrates the effect of involuntary group membership that is not satisfying. The project consisted of 100 single and semi-attached permanent housing units. It was built in the middle of a residential area of a town about 15 miles from a large city. At the time of the study, 1947, about 40% of the population of Regent Hill were older residents who had once worked in the shipyards and had remained in the project after the end of the war. The others were persons who had moved in later during the period of acute housing shortages. The great majority of the residents keenly felt that they had been forced to live in the project by circumstances beyond their control. For those who had moved in during the war, it was the shipyards and war exigencies that had forced them to live there. For the others, it was the acute housing shortage



and impossibility of finding other places to live that had made them come to Regent Hill.

The group memberships forced upon them by living in the project were resented, and attempts were made to avoid them. Many residents stated that they had not expected to like the type of person who lived in a government housing project. They expected to find the other residents rather low-class people and did not want to be forced to associate with them. Thus, irrespective of the actual potentialities which these group memberships may have had, they were unsatisfying because the residents never encouraged the development of any group life and, indeed, tried to dissociate themselves from the community in which they were forced to live. Let us examine the consequences of this state of affairs.

*The social and emotional aspects of membership in the Regent Hill project.* The residents of the project had on the whole an inadequate social life. Indeed, for many residents the state of affairs might be described as self-imposed social isolation. Most residents reported only one or two friends in the community, and about one-fourth did not have any friends there.

There was, in addition, a surprisingly great amount of hostility expressed toward neighbors in the project. In one interview survey, more than 60% of those interviewed expressed belief that their neighbors were low-class people with whom it was undesirable to associate. In other words, the residents had come to the project expecting to find undesirable neighbors in "a government housing project." They feared the group memberships forced upon them; choosing between such undesirable and unsatisfying group membership and no membership at all, they tended to choose the latter.

One might expect from such a state of affairs that the residents of the project would have tended to make friends and belong to groups in the surrounding community. This, however, was not the case. While they may have desired such group membership in the surrounding community, there were a number of factors which prevented their achieving it. Since they looked down on the project and its residents, they imagined that outsiders would also have the same attitudes toward people from the project. Thus, in any contact which they had with the people in the surrounding community they strove to detach themselves from the project. This, of course, placed severe limitations on the kinds of contacts they could have with the surrounding community and severely limited the number of channels available to them for making such contacts. The result was that the project residents were also rather isolated from the surrounding town. Only about 20% of the project residents were members of any town clubs or organizations. There were relatively few friendships between project residents and townspeople. Compared to residents of

the surrounding community who had been living there the same length of time, the project residents were clearly in a state of relative social isolation.

We thus have practically the opposite state of affairs from that of Westgate. Instead of a full and satisfying social life, there was here a very unsatisfactory state of little social life and great difficulty in achieving group memberships which had the possibility of being satisfying. As one might expect, this state of affairs generalized into attitudes toward their homes and toward the community. Most residents were dissatisfied with living in the Regent Hill project. Many wanted to leave and expressed the intention of doing so as soon as they could find a suitable place elsewhere. The physical inconveniences which did exist in the project became very important and were major sources of irritation to the residents.

*Group action in Regent Hill.* The investigators in this study, after assessing and attempting to diagnose the state of affairs in the Regent Hill project, tried experimentally to change the pattern of social life within the project and to change the seemingly dominant pattern of hostility among neighbors. The experiment tried to stimulate contacts among the residents by getting them to cooperate on a program of community activities. In contrast to the spontaneity and ease with which a community organization and community activities had arisen in Westgate, such a program in Regent Hill, even with the help of skilled community workers, was by no means an easy affair. Feelings of non-cooperation, hostility, threatened status and prestige, and reluctance to enter into contact with other project residents all made such a program difficult to start and carry on. We do not need to dwell here on the success of the program and the changes of various kinds that were created. The point we wish to make is that, in the absence of real need-satisfaction from the group memberships, the whole context of social and personal life was adversely affected.

### Summary

It is clear that group membership has a very important place in the lives of people. It is also clear that people join groups for at least three main reasons. Physical factors such as distance and "functional" proximity influence the opportunity which individuals have for contacts with each other and the subsequent formation of groups.

We have described an instance in which the design of the houses and the physical and spatial relations among the houses had an important influence on formation of social groups. We have also described instances in which these involuntary group memberships were satisfying and others in which they were not satisfying. This difference in satisfaction

affected the social life within the community and the readiness of the residents to collaborate in group-action programs.

#### REFERENCES

1. Festinger, L., Schachter, S., & Back, K. *Social pressures in informal groups*. New York: Harper, 1950.
2. Festinger, L., & Kelley, H. H. *Changing attitudes through social contact*. Ann Arbor, Mich.: Research Center for Group Dynamics, 1951.

## An Experimental Study of the Cohesiveness of Underprivileged Groups

John Thibaut

The concept of cohesiveness is of central importance in the psychology of groups. In the sense in which the term has recently come to be used, a certain minimum amount of cohesiveness, or integrating force, is necessary for a group to exist at all. Unless a certain critical strength of force toward remaining in the group applies to the members of the group, the group will disrupt and cease to be. This total field of forces, which acts on members to remain in the group, is called the cohesiveness of a group, and may be defined as the average for all members of the strength of resultant force toward remaining in the group (2, 161).

A force toward remaining in the group may come from various sources. The force may derive mainly from the valence of ulterior goals which are mediated by belonging to the group (e.g., the force on a golfer toward membership in a country-club group which controls the only course in the vicinity). Somewhat similarly, belonging to a particular group may be prestigious and thus give rise to forces toward membership. Or, a force toward belonging to a group may depend mainly on the attractiveness of its members. In this latter case, the valence of belonging to the group is coordinated to the valence of sharing in a certain domain of activities with the group members.

The present study was undertaken in order to learn more about the circumstances under which cohesiveness varies. In an earlier exploratory study of the cohesiveness of groups in a clothing factory by B. Willerman and the present author, the kinds of variables which appeared to affect cohesiveness most markedly were investigated. Two factors appeared to be causally related to variability in cohesiveness: (a) the status position of the group in a status hierarchy, and (b) the relative success of a low status group in improving its status through group action. (*Status* is here taken

Condensed from a fuller treatment in an article with the same title in *Human Relations*, 1950, 3, 251-278. Reprinted by permission of the author and *Human Relations*. The research reported here was sponsored by the Office of Naval Research.



to mean simply the valence of the enduring activities assigned by relevant authorities to the group.)

Since in the factory study, as in field studies in general, it was difficult to isolate and manipulate the causal variables, a more adequate method was sought for investigating these relationships further. We set up the requirement that the arrangement to be selected must be one in which the degree of cohesiveness of a group can be measured before and after the two independent variables are introduced, i.e., before and after (a) the group has been accorded a low-status position in a status hierarchy, and (b) the low-status group has attempted with success or ill-success to improve its status position through group action. Further, the effects of the two independent variables on the dependent variable (i.e., cohesiveness) must be separately measurable. Finally, the method must be so designed that the dynamics of change in the dependent variable are theoretically understandable.

The present experiment was devised in response to these requirements. In each experimental session, two groups were created. One group was assigned tasks of high positive valence, while the second group performed related but quite negatively valent tasks. Then, the situation was so manipulated that the low-status group would take group action in an effort to elevate its status. For some of the groups this action was allowed to be successful, and the group was granted better treatment; for others the group action of the low-status group was unsuccessful and the group returned to its negatively valent activities.

In measuring the effects of the experimental variables on cohesiveness, the decision was made to restrict our measurements to only one component of cohesiveness, namely, to those forces which derive from the attractiveness of group members.<sup>1</sup> Hence, sociometric tests were administered to the group members both before and after the experimental session. Since cohesiveness is defined in terms of the average resultant force toward remaining in a group, the measurement data had to reflect the preference for own-group relative to a relevant other-group. Hence, in this experiment, after the pre-session sociometric test had been administered, the members assigned to the two groups for each session were drawn from a larger functioning social group. In this way, a socially relevant other-group was created, and the two groups for each session could be equated for initial proportion of sociometric choices directed within own group. Changes in cohesiveness were then measured, for each of the two groups in each session, by the changes from pre-session to post-

<sup>1</sup> Back (1) has demonstrated that three different components of cohesiveness can be distinguished, and that all three relate in the same way to the internal power of a group over its members, although they act differently in relation to other aspects of group functioning.

session sociometric tests in the proportion of choices directed within own-group.

From these data alone, it is not possible to determine whether increased cohesiveness represents increased attractiveness of own-group members, decreased attractiveness of opposing-team members, or both. For example, any antagonism toward members of the opposing team creates negative driving forces which have the direction not merely away from affiliation with the opposing group but specifically toward own-group (since no third alternative is presented). In order to learn something about the component forces operating to produce changed cohesiveness, the sociometric questions were supplemented with additional post-session questions and with systematic observation procedures.<sup>2</sup>

In summary, the present experiment was designed to measure the effects on group cohesiveness of two variables: the status position of the group, and the relative success of low-status groups in improving their status through group action. Two groups were formed for each experimental session in such a way that at the outset of the experiment each group found approximately half of its sociometric choices in its own group and the remaining half in the opposing team. At the conclusion of each session, after the two experimental variables had been introduced, the sociometric question was repeated and any shift toward increased proportion of own-group choices was taken as the measure of increased cohesiveness.

## Experimental Procedure

### *Subjects*

The subjects were recruited from groups of boys in settlement houses and summer camps in the Boston area. The great majority of the boys were between 10 and 12 years old. The groups recruited from settlement houses were organized athletic clubs, most of which had been functioning for at least six months. At the summer camps, each group was drawn from the same cabin, where the members had been living together for at least 10 days.

Fourteen groups were recruited from settlement houses while eight groups came from three summer camps. Each of the groups was composed of either 10 or 12 boys, so that two teams of 5 or 6 boys could be formed later.

<sup>2</sup> A real question may be raised about defining cohesiveness so that positive attractions within the group and repulsions outside the group are treated in the same way. At the present time, there is no conclusive empirical evidence to determine whether these two sources of force toward the group have identical or different effects. Until differences are established, we prefer to define cohesiveness in the more general term.

At the time of recruitment, the subjects were told nothing about the experiment. They were simply invited to play some games, with the explanation that the experimenter was interested in seeing how boys actually went about the business of playing games.

### *Preliminary Procedures*

Within an hour before the start of each session, a sociometric test was administered by one of the experimental observers to the group of boys, either in the home club-house (for settlement-house groups) or in the home cabin (for camp groups).

The sociometric question is as follows: "Suppose we were going to play some games like throwing balls at a target, and we were going to choose up sides. Of all the boys here, which one would you like most to have on your side? Write his name next to number one. Now write down the name of the boy you would like next best to have on your side. Then write down your third choice and your fourth choice. If there are any others you would like very much to have on your side, you can write down their names too."

This sociometric information was then communicated to the experimenter, who made up two teams. Every effort was made to construct two teams which would be sociometrically homogeneous, both within teams and across teams, and in which every subject would find, on the average, about an equal number of his close friends on each team.

By assigning to the first five choices of each subject a number, beginning with 5 for his first choice, 4 for his second, and so on, down to 1 for his fifth choice, it was possible to compute for each subject the mean index of sociometric attractiveness of his own team.

The average indices of sociometric attractiveness of own-team were computed for parts of teams in the following manner: Each team was divided into two parts. One part, designated as the "central" members, included that half of the team which had received the larger portion of weighted sociometric choices from the total group of subjects (i.e., including both teams). These were the more popular subjects in the total social situation. The other part of the team, designated as the "peripheral" members, included that half which had received the smaller portion of weighted choices from the total group of 10 or 12. These were the less popular in the total social field. For each of these parts of each team, an average index of the attractiveness of own-team (including the choices of all own-team members, both central and peripheral) was computed.

Since the distinction between central and peripheral members takes on theoretical importance in analyzing and interpreting the results, we ought to demonstrate at this point that these two types of members are

different in the measurements which define them. Table 9.1 shows the average weighted sociometric choices received by central and by peripheral members in the various treatments. The magnitudes of differences between central and peripheral members are consistently large in all of the treatments.

Table 9.1 also shows the average indices of attractiveness of own-team

TABLE 9.1

MEAN WEIGHTED SOCIO-METRIC CHOICES RECEIVED, AND MEAN INDICES OF SOCIO-METRIC ATTRACTIVENESS, OF OWN-TEAM, BY CENTRAL AND PERIPHERAL MEMBERS ASSIGNED TO TEAMS IN THE VARIOUS TREATMENTS  
(Based on Pre-Session Sociometric Question)

STATUS OF TEAMS	N (TEAMS)	CENTRAL MEMBERS		PERIPHERAL MEMBERS		TOTAL MEMBERS
		Mean Weighted Choices Received *	Mean Indices of Attractive- ness of Own- Team †	Mean Weighted Choices Received *	Mean Indices of Attractive- ness of Own- Team †	Mean Indices of Attractive- ness of Own- Team †
Unsuccessful low	9	23.44	1.25	6.44	1.31	1.29
Consistently high	9	23.22	1.29	5.56	1.27	1.28
Successful low	9	21.78	1.18	6.67	1.38	1.27
Displaced high	9	23.44	1.22	6.00	1.32	1.26
Control teams (combined)	4	22.50	1.27	5.75	1.49	1.37

\* Standard deviations among teams are not significantly different, they range from 1.80 to 3.24, with a median of 2.37.

† Standard deviations among teams are not significantly different, they range from .23 to .47, with a median of .32.

broken down separately for central, peripheral, and total-team members. These classes are further arranged in terms of the kinds of experimental treatment assigned. From the table it is apparent that subjects were assigned to experimental treatments in such a way that no differences exist in the relative attractiveness of own-team at the outset of the experiment. (No pair of means in the table yields a difference which is statistically significant.)

To continue with the pre-experimental procedure, the settlement-house groups were escorted to the experimental room at the Massachusetts Institute of Technology by the observer who had administered the sociometric test. The experimental room measured approximately 15 by 25 feet and was furnished only with a long table and chairs at one end for observers. When the sessions were held at summer camps, a room of similar dimensions was used.



On arrival at the experimental room, the experimenter briefly repeated that he and the observers were interested in seeing how this group played certain games. The experimenter then divided the group into the two teams which he had assembled from the sociometric data. The teams were distinguished by differently colored T-shirts, each with an identifying number. During each experimental session one team was accorded high-status treatment and the other was accorded low-status treatment.

The observers, who were seated at a table at one end of the room, were introduced simply as people who were interested in watching games. The subjects paid no particular attention to them, and later it appeared that the activity of the observers had been accepted as part of a score-keeping role.

### *The Games*

Regardless of the experimental treatment used, the two teams from every group proceeded through the same schedule of games. Each group played a series of three different games, the last being repeated after an intermission to make four separate game-periods.

These three games were of such a nature that one team would be obliged to serve or assist the other team. In one game they served as "human arches" for the other team to run under, in another they were a "human chain" for the other team to buck against, and in the third game they held the target for, and retrieved, thrown bean-bags.

### *Experimental Plan*

Three kinds of treatments were employed in the experiment.

1. *Unsuccessful group-action treatment.* In this treatment the low-status team is disfavored by the experimenter throughout the four periods. The low-status members are addressed in a matter-of-fact and coolly unsympathetic way, the experimenter does not address them by name but by number. The high-status team, on the other hand, is accorded sympathy, encouragement, and warmth. Moreover, the high-status team performs in all instances the more favorable functions during play.

During the recess, which lasts six minutes, the experimental variation begins. One of the observers, who has been specially trained for the job, calls the members of the low-status team together. He encourages them to air their grievances and to devise a strategy for getting better treatment from the experimenter. The observer's manner, through all of this consultation, is sympathetic and then mildly hortatory. He finally structures for the low-status team the possibility of a direct group appeal to the experimenter. The low-status members are encouraged to take a vote on

the desirability of direct group-action and the observer is able to get unanimous assent. The observer also suggests that it would be good to demand a replay of the last game, with the low-status team now throwing the bean-bags. Since this game is generally the most attractive, this suggestion is readily accepted. When the vote has been taken, pledging every member of the team to participate in the group-action, the experimenter returns to the room.

The members of the low-status team immediately besiege him and demand that they be given a chance to throw the bean-bags. In the present experimental variation the experimenter rejects their petition. He waves the low-status team aside and proceeds to the high-status team, to whom he says that he would like to see them repeat the last game. To lend plausibility to his persistent focusing on them, he emphasizes that he is interested in seeing them better their earlier performance. The low-status team then is required to return to the unattractive task for the fourth period.<sup>3</sup>

2. *Successful group-action treatment.* In this treatment, the first three game-periods and their two intervening recesses are conducted precisely in the same way as in the unsuccessful group-action treatment. The low-status team remains in the unfavorable position throughout the first three game-periods. In this treatment also, the observer organizes the low-status team to take protesting group-action during the third recess. This time, however, when the low-status team petitions the experimenter, their demands are granted, and during the last game-period the high-status team holds the target and retrieves the bags.

3. *Control treatment.* In this treatment, the teams are accorded equal fates. They interchange positions by rotation, so that no grievances about differential favor can develop. The same game-periods as in the experimental treatments are maintained. Under this treatment no group action is organized.

### ***Post-Session Questionnaire***

Immediately after the fourth game-period was finished, the members of the two teams were assembled around a large table, where they were asked to fill out a questionnaire. A somewhat different set of questions was asked of the low-status members in the unsuccessful treatment, the low-status members in the successful treatment, and the high status members irrespective of treatment. The members of both teams in the control

<sup>3</sup> After the games have been played and the post session questionnaire has been finished, the low status teams are given an opportunity finally to play the games. Ten or 15 minutes of "Buck Buck" and the target game were usually successful in relieving the frustration.

treatment were asked only one question, which was uniformly the first question in all of the questionnaires. This common question, which is the crucial item in the questionnaire, is essentially a repetition of the pre-session sociometric question. The question is as follows:

"Suppose we had time for another game. If we were going to make up new teams and each team had its turn, which five boys here would you most like to have on your team?"

The remaining questions will be described as they become relevant.

### **Observer Assignments**

Two observers were assigned to specialized tasks. In order to minimize possible bias they were kept totally unaware of the theory guiding the experiment and of current trends in the results. Circumstances did not permit a measure of reliability of observation.

*Inter-team communications.* Each of the observers worked at a single schedule. One concentrated his attention entirely on inter-team communications. It was his function to record all communications (whether verbal or non-verbal) which originated in one team (whether from the entire team, a subgroup, or an individual) and were addressed to the other team (whether to the entire team, a subgroup, or an individual).

Six categories of communication were observed which can be considered to lie roughly along a scale, from maximum identification with the other team to maximum antagonism toward the other team. Hence, by assigning a scale value, from 1 to 6, to each category of communication, a summary index of affect communicated to the other team can be computed for each team for every game period.

For each single communication the observer records the category, the initiator, and the recipient.

*Second observer.* It was the responsibility of the second observer to record three kinds of activities: (a) attempts by a team or a team subgroup to act together in order to obtain a changed fate for own- or other-team; (b) attempts by individual team members acting on the behalf of their teams or of the opposing teams to improve their fate; (c) attempts to leave the group by requests to go home, to join the other team, or out-of-field behavior.

### **Results**

In this section, we shall first present the data on the changed cohesiveness of the various types of teams in the experimental and control treatments. Following this, we shall attempt an interpretation of these data by means of three general principles. Additional data, from the observation

schedules and the post-session questionnaire, will be cited to test the adequacy of the three principles. In conclusion, we shall discuss briefly the components of the field forces determining group membership in this experimental situation.

### *Changes in Cohesiveness*

Table 9.2 shows the changes in cohesiveness which resulted from the experimental and control treatments. The data presented are the changes

TABLE 9.2

DIFFERENCES BETWEEN PRE-SESSION AND POST-SESSION IN AVERAGE INDICES OF SOCIOMETRIC ATTRACTIVENESS OF OWN-TEAM, FOR CENTRAL, PERIPHERAL, AND TOTAL-TEAM MEMBERS IN THE VARIOUS EXPERIMENTAL AND CONTROL TREATMENTS \*

TEAMS	CENTRAL MEMBERS				PERIPHERAL MEMBERS				TOTAL MEMBERS			
	N (Teams)	M	S.D. (Among Teams)	t †	N (Teams)	M	S.D. (Among Teams)	t †	N (Teams)	M	S.D. (Among Teams)	t †
Unsuccessful low-status	9	.319	.173	5.50	9	.198	.840		9	.266	.469	1.71
Consistently high-status	9	.265	.451	1.71	9	.530	.633	2.51	9	.402	.390	3.09
Successful low-status	9	.039	.351		9	.102	.921		9	.048	.439	
Displaced high-status	9	.004	.463		9	.160	.434		9	.077	.395	
Control teams (combined)	4	.094	.214		4	.126	.399		4	.108	.250	

\*When the average index is positive, as it is throughout this table, it indicates a shift toward choosing within own team.

† The *t* computed tests the hypothesis that the obtained mean is zero. A *t* is reported only if  $p < .20$ . 1 or 8 degrees of freedom, a *t* of 5.36 is at  $p = .01$ , 2.31 at  $p = .05$ , 1.86 at  $p = .10$ , and 1.40 at  $p = .20$ .

from pre-session to post-session in the mean indices of sociometric attractiveness of own-team. Numbers of cases (*N*), changes in mean indices (*M*), and standard deviations of the changes among teams (*S.D.*) are shown separately for central, peripheral, and total team members belonging to teams assigned to the various experimental and control treatments.

It will be noted that all of the changes in average indices in the table are in a positive direction and hence indicate shifts toward greater choice within own-team.

It should be noted also that the entries for the control teams represent the combined teams. The differences in average indices and the standard deviations among teams were computed separately for the teams wearing one color of shirts and for the teams wearing the other color; the tabled entries are the averages of the values for the two sets of teams.

Finally, the values of *t* reported in the table serve to test the hypothesis



that the difference in average indices is zero, i.e., to test whether or not the experimental treatment has resulted in a significant shift toward increased choice within own-team.<sup>4</sup>

From the values of  $t$  in the table, it is apparent that the experimental procedures have had a significant effect in producing cohesiveness only in teams assigned to the experimental situation in which the group action of the low-status teams was unsuccessful. The effect is statistically significant, however, only for the central members of low-status teams (i.e., these members tend to shift toward increased choice of own-team members, both central and peripheral), the peripheral members of high-status teams (who shift toward greater choice of own-team members, both central and peripheral), and the high-status teams taken as a whole.

No significant increase in own-team choices occurs for the peripheral members of unsuccessful low-status teams, for the unsuccessful low-status teams taken as a whole, for the central members of the consistently high-status teams, nor for any of the teams or parts of teams in either the control treatment or the treatment in which the group action of the low-status teams is successful.

Turning to the variability of the changes in indices, it is interesting to note the remarkably large standard deviations among teams for the peripheral members of the low-status teams in both experimental treatments. In order to test the hypothesis that any among-team variance is not greater than one would expect by chance, we have first to compute an appropriate estimate of the population variance. This estimate can be obtained from the average within-team variances. When the among-team variances for the peripheral members of the low-status teams in the two experimental treatments are evaluated against their respective estimates of the population variance, the former prove to be significantly large. In both instances the  $F$  is significant at the 5% level. (None of the remaining among-team variances yields a significant  $F$ .) Thus, it appears that for the peripheral members of the low-status teams significantly different variables are operating from team to team to influence the affiliations of these subjects.

The major results may be summarized into three classes: (a) the significant increases in own-team choices among the central members of the unsuccessful low-status teams and among members of the consistently high-status teams; (b) the absence of increased cohesiveness in the remaining teams and parts of teams in the two experimental treatments; and (c) the large among-team variability of changed cohesiveness among the

<sup>4</sup> Comparisons of means for central and peripheral members within the same treatment or for high- and low-status teams within the same treatment must of course take account of the correlation.

peripheral members of the low-status teams in the two experimental treatments.

### *Theoretical Interpretation*

In order to account for these findings it is necessary to isolate as clearly as possible the component forces which give rise to the resultant changes found in the different experimental treatments. From the available data it is not possible to determine these components with certainty nor to measure their relative strengths. It is possible, however, to construct a theory which accounts for the findings reasonably well and which indicates directions for further research.

*Attractiveness of group activities and attractiveness of group members.* The most plausible basic assumption seems to be that there is a close association between the attractiveness of the activities of a group and attractiveness of membership in that group. If a previously homogeneous group is split into two subgroups, on a basis which appears fortuitous to the members, and one subgroup is then accorded positive and the other negative treatment, forces will arise in the former subgroup to retain the treatment and in the latter toward abandoning it. Forces toward affiliating with members of these subgroups will also change and thus alter the degree of cohesiveness of the subgroups. The direction of this change in cohesiveness, whether toward more or less, will depend upon the direction of the change in valence of fate.

From this basic assumption, we should expect the consistently high-status team to become more cohesive and the unsuccessful low-status team to become less cohesive. Actually, only the first derivation holds (Table 9.2); the unsuccessful low-status teams show a slightly greater *increase* in cohesiveness than do the control teams. The reason for this unexpected finding will become clearer when we examine the patterns of communication of aggression between teams.

The prediction one would make from this basic assumption for the successful low-status teams and the displaced high-status teams is not clear. Since the sociometric choices were made *after* the discrimination had been at least partially rectified, it might be expected that the effects would be reduced, or even possibly eliminated. Table 9.2 shows no significant shift in sociometric choices for either of these experimental treatments. The possibility remains, of course, that forces to change were present, but counterbalanced by opposing forces. We shall examine this possibility in a later section especially with respect to the successful low-status teams.

*The communication process.* In order to understand more concretely what was happening in this setting, let us review the responses of the

teams to the course of the experiment. On arrival at the experimental room the subjects are in general somewhat subdued, slightly awed, and exceedingly curious about what is to happen. At the outset it is made plain that the experimenter is the authority and that he is interested (in the experimental treatments) in seeing the high-status team play a game. Through the first game, however, it is not by any means apparent to either team that the high-status team is meant to be persistently favored. In fact, the boys' behavior makes it clear that the usual fair minded practice of rotating turns is taken for granted. For example, when all of the members of the high-status team have crawled through the wickets, then they automatically assume the wicket positions and the low-status team **lines up for its turn to run.**

Usually, it is only by about midway through the second game period that the experimenter's intentions and expectations are fully understood by the teams. This understanding is characteristically betrayed by marked sullenness, irritability, and demands for better treatment by the low-status subjects, and by various combinations of glee, embarrassment, sheepishness, and guilty smirks among the high-status subjects. (Note that in Table 9.3 many of the high-status subjects hold themselves responsible for the unfairness.) By early in the third game period the low-status teams have become extremely frustrated. Fights with high-status subjects sometimes occur. Kicking and banging with fists against the wall are observed, as well as withdrawal and crying.

The experience of both teams makes it rapidly clear where the power is located and how it is to be used. Table 9.3 shows the responses to the question in the post-session questionnaire: "Who did the unfair things?" Of those offering codable responses, 57% of the members of the unsuccessful low-status teams designated the experimenter as responsible.

The many abortive and unsuccessful attempts by the members of the low-status teams, collectively and individually, to influence the experimenter in their favor make it plain to them that their power to alter their position is inadequate. At the same time, they perceive that the experimenter's power is protective and provident to the high-status team. Frustrated as they are, their standards of fair play violated, the members of the low-status teams focus some of their aggressive feelings toward the high-status teams. That this hostility was perceived by the high-status teams is clear from the responses, shown in Table 9.3, to the post-session questionnaire item: "How did the other team feel toward your team?" Of those whose responses could be coded, 74% of the members of consistently high-status teams and 70% of the members of displaced high-status teams characterized their opponents' feelings toward them as "angry." The members of the low-status teams do, in fact, overtly display some of their hostility toward the members of the high-status teams. These

avored subjects, however, are perceived as protected by the experimenter's power, which is too great to challenge. As a result, the hostility generated against the high-status team is not given full expression.

During the recess, the observer-organizer manages to inspire the low-status teams with a strong resolve to take their grievance to the experimenter, and to demand that they be permitted to play the bean-bag game. When their petition is rejected, the low-status teams' perception of their own inadequate power is strengthened, their hostile impulses toward the high-status teams continue to be only partially communicated, and their hostile tensions remain undischarged (4).

For those low-status teams whose demands are accepted by the experi-

TABLE 9.3

INDIVIDUAL SUBJECTS' PERCEPTIONS OF SOURCES OF UNFAIRNESS AND OF FEELINGS OF OPPOSING TEAM.  
(Based on Post-Session Questionnaire)

TEAMS	RESPONSES TO QUESTION: "WHO DID THE UNFAIR THINGS?"		RESPONSES TO QUESTION: "HOW DID THE OTHER TEAM FEEL TOWARD YOUR TEAM?"
	Experimenter	High-Status Team	Angry
Unsuccessful low-status	20 (57%)	7 (20%)	3 (11%)
Consistently high-status	4 (13%)	12 (39%)	28 (74%)
Successful low-status	9 (25%)	15 (42%)	5 (18%)
Displaced high-status	7 (18%)	5 (13%)	21 (70%)

menter, however, the situation is rapidly restructured. These teams have attained the status-goal through their own group action. Their own power is now perceived to be greater and, moreover, the experimenter's power is no longer perceived as antagonistic, but as partially augmenting their own. They now feel able to express a fuller measure of their incompletely discharged hostility against the members of the high-status teams.

The evidence for this view of the process may be found in an analysis of the communication within and among groups which is fully reported elsewhere (5). This analysis led to the following conclusions: If groups are placed in an unfavorable position and if attempts at improving their status (upward mobility) through group action are *successful*, these groups show what appears to be a cathartic discharge of aggressive communication against the opposing groups, and do not develop cohesiveness, either as a whole group or in their central or peripheral parts. The complex of circumstances—original development of hostility toward the favored groups, perception of own power as inadequate to alter fate, successful



rise through group action to a more valent position, restructuring of perception of own power and the direction of the experimenter's power, discharge of aggressive communication against opposing groups—this complex sequence leads to a readiness to accept opposing group members as one accepts own-group members. However, if instead of successful upward mobility, the group action is repulsed by the experimenter, then the discharge of aggressive communication tends to decrease from an already moderate rate; the perception of an extremely low ratio of own power to experimenter's power becomes sharper and more crystallized; and the central members develop group cohesiveness. Furthermore, this increased cohesiveness appears to be importantly characterized by rejection of members of the opposing team, as a result of persisting hostile tensions.

*The vulnerability of peripheral members.* At this point we may raise some questions about the differences noted in Table 9.2 between central and peripheral members under the different experimental treatments. Why did the peripheral members of the consistently high-status teams increase in cohesiveness even more than the central members? Why is it that the peripheral members of the unsuccessful low-status teams failed to increase in cohesiveness when the central members did? And why was the among-team variability in changes of cohesiveness so great among the peripheral members?

To answer these questions it will be useful to review certain facts. Each pair of teams appearing in these experiments was drawn from the same organized group. In the original group setting, some of these boys were popular, some not so popular, some were leaders, some followers. When for this experiment the boys were recruited and assigned to teams, we were careful to cut across popularity lines and to assign equal numbers of popular and unpopular boys to the two teams. Boys who had a greater than average popularity in the total group of 10 or 12 were defined as central members of their team; boys whose popularity was less than average for the group were defined as peripheral members of their team. In the experimental treatments, the two teams were now accorded unequal fates, one positively valent, the other negatively valent. The problem is: What are the effects of these differential dispositions of fate on the central and peripheral members, whose positions as central or peripheral had been determined by relationships antedating the experiment?

To begin to answer this question, it is useful to differentiate a bit further the properties of the central and the peripheral members. The principal distinction to be made between the two types of members is in terms of the number and strength of the sociometric choices directed toward the member from the social environment within the experimental room. Furthermore, it is believed on the basis of some empirical evidence that

the central member is connected by stronger and more numerous bonds of friendship with the other (own-team and opposing-team) subjects, than is the peripheral member. The peripheral member has relatively little affective security and affiliation in the total social environment and thus is likely to be susceptible to shifting his personal allegiances. In other words, the restraining forces against altering sociometric choice are relatively weak for the peripheral member. Hence, if a force of a given magnitude arises with the direction away from present (or toward new) sociometric choices, the resultant force to change the sociometric choice will be greater for the peripheral than for the central member.

To support the foregoing contentions about the differences between central and peripheral members, we need some direct evidence that the peripheral members are relatively less a part of the total group. What we need is a measure of the strength of attractiveness of the total social environment to the member. For the low-status teams such a measure is available. This measure is the number of instances of out-of-field behavior and of appeals to the experimenter for release from the situation for central and peripheral members of low-status teams during the first three periods. As the valence of activities becomes increasingly negative, the only force which can continue to attract the member to the experimental situation is that coordinated to the strength of his belongingness in the social field. From Table 9.4 it appears that the peripheral members are actually less strongly anchored to the social system created in the experiments and presumably more vulnerable to forces toward changing sociometric choices.

Forces to alter sociometric choices arise, as we have seen, from two major sources: (a) the valence of fate dispensed to the team, and (b) hostility toward members of the opposing teams. For the consistently high-status teams, these two sets of forces have the same direction of increasing choices within own-team. For the low-status teams the forces act in opposite directions.

When these differences between central and peripheral members are applied to the *consistently high status* teams, we should conclude that a change in the resultant force toward belonging to the group (stemming from both the valence of fate and hostile impulses) will alter the readiness to choose own group members more strongly for peripheral than for central members. Since the magnitude of this resultant force is presumably equal for central and peripheral members in the favored teams, it follows that the peripheral members will increase more readily their choices for own group members than will the central members.

The situation in regard to the *unsuccessful low status* team is more complicated. The forces resulting from valence of fate should tend to reduce the cohesiveness of these teams, and the effects of the forces on

actual choices should be greater for peripheral than for central members. On the other hand, the forces deriving from inter-team hostility would tend to increase the cohesiveness of these teams, and since the net changes actually obtained were toward increased cohesiveness we must assume that these forces outweigh the others. We should expect these forces, too, to have greater effect on the peripheral than the central members. We still cannot account for the greater increase of cohesiveness among central than peripheral members, however, unless we have evidence that the hostility toward the opposing team was actually different for the two types of members.

Fortunately, there is evidence relevant to this point. An examination of the pattern of aggressive inter-team communications initiated by the

TABLE 9.4

ATTEMPTS BY CENTRAL AND PERIPHERAL MEMBERS OF ALL LOW-STATUS TEAMS TO LEAVE THE GROUP DURING THE FIRST THREE GAME PERIODS \*

Low-Status Teams	<i>N</i> Subgroups	<i>M</i>	<i>S.D.</i>	<i>t</i>
Central parts of	13	1.07	2.29	1.81 <i>p</i> = .07
Peripheral parts of	13	2.54	1.85	

\* Taken from observation data. Two categories are combined: out-of-field behavior and direct appeals to the experimenter to be released from the situation. Attempts to join the opposing team are excluded.

consistently high-status teams toward the unsuccessful low-status teams reveals an interesting fact. When central and peripheral members of low-status teams are compared, the latter are seen to receive significantly more aggressive communications from the central members of high-status teams. (The *t* obtained is 7.15, which for 8 degrees of freedom is significant at beyond the 1% level.) On the other hand, the central members of low-status teams receive a significantly greater number of aggressive communications from the total high-status team (i.e., where the observer recorded that the entire high-status team initiated an aggression as a group, or at least in unison). (The *t* obtained is 5.23, which also is significant at the 1% level.)

This pattern of aggression may perhaps be understood as a function of the inability of any single individual to attack a central member who, however, may be safely attacked by an entire group. A peripheral member, on the other hand, can be attacked with impunity by a central member.

An inference which can be drawn from the foregoing is that peripheral members of the unsuccessful low status teams will tend to focus their hostility on the central members of opposing teams, while the central

members of the low-status teams will be likely to distribute their hostility over the opposing team as a whole. It would hence be expected that the peripheral members of the unsuccessful low-status teams will continue in the post-session questionnaire to choose among the peripheral members of the opposing team, while the central members will tend to reject all members of the opposing team. In other words, the peripheral members will show less of an increase in cohesiveness than will the central members.

We have yet to account for the large standard deviations among teams for the peripheral members of the teams. This, too, can be derived from the greater readiness for peripheral members to change their sociometric choices. It is necessary only to make the reasonable assumption that the experimental procedure varies from one experimental session to the next. In the first place, the experimenter does not always act in precisely the same manner. He is unintentionally more or less friendly, more or less voluble, and so on. In addition, it is plausible to assume that he is perceived differently from session to session even when he is the same. Moreover, each session has a dynamics all its own, with one unpredicted event (e.g., somebody gets accidentally tripped) which compounds and proliferates into a sequence of activities not precisely matched in any other session.

Such uncontrolled factors can be supposed to affect the resultant force toward belonging to own-team, to the extent that these factors operate either to modify the valence of the team situation or (more directly) to increase or decrease hostilities toward members of own-team or opposing team. If these components of the resultant forces unique to each session are held to be equal for central and peripheral, then it follows from the third principle that the peripheral members will show altered cohesiveness more strongly than will the central members, variability in cohesiveness from team to team will be greater for peripheral than for central members.

### Conclusion

In conclusion, it may be helpful to return briefly to the discussion of the definition of cohesiveness to reconstruct the ways in which cohesiveness has been altered by the experimental conditions in the present study. In the earlier exposition of the conceptual properties of cohesiveness, we had concluded that it is to be treated in terms of the average resultant force toward remaining in the group, where the forces derive from the valences of shared activities with group members and with nonmembers.

In the present study, as we have pointed out, it has been difficult to measure directly the components of the average resultant forces to remain in the group, and hence we must be cautious in making assertions about



their nature. However, our explanatory principles do in fact lead to hypotheses about the alterations in component forces, and some evidence has been produced in support of these hypotheses.

From our general theoretical interpretation, we have postulated that the valence of activities which a group is allowed or forced to engage in affects the attractiveness of sharing membership in the group with others. Secondly, we have proposed that inter-team hostilities develop where two teams are forced to interact on a basis of unequal status, and that these hostilities significantly affect the attractiveness of sharing membership with others. In some settings these two influences support each other, while in different settings they are in opposition. Thirdly, we have asserted that peripheral members (or those who are relatively unpopular in the total group) are more susceptible to influences tending to produce changes in their interpersonal affiliations.

The fact that central and peripheral members modified their choices for own-team and other-team members in a rather different way amplifies the findings of French (3) and Wright (6). In French's experiments, under conditions of strong frustration, organized groups exceeded unorganized groups in degree of "we-feeling," interdependent behavior, equality of participation in the group activity, and motivation. Members of the organized groups, however, also showed more intra-group aggression than did members of unorganized groups. No evidence was available to indicate whether or not the groups became more cohesive as a result of frustration.

Similarly, in Wright's study, pairs of children who were strong friends showed an increase in cooperative behavior and a decrease in conflict behavior when they were introduced into a frustration situation, while pairs of weak friends did not change significantly in such categories of behavior. Although frustration seemed to increase a readiness to cooperate among strong friends, Wright had no evidence to show whether or not strong friends became even stronger friends under the influence of frustration.

The evidence from the present experiment suggests that, if two groups interact with differential status and the hostility deriving from discriminating treatment remains unexpressed, the original cohesiveness of the group is increased. If the hostility is expressed through acts of aggression against the favored group, the cohesiveness of the group returns to approximately its original value.

#### REFERENCES

1. Back, K. Influence through social communication. *Journal of Abnormal and Social Psychology*, 1951, 46, 9-23.

2. Festinger, L., Schachter, S., & Back, K. *Social pressures in informal groups*. New York: Harper, 1950.
3. French, J. R. P., Jr. Organized and unorganized groups under fear and frustration. *University of Iowa Studies in Child Welfare*, 1944, 20, 229-308.
4. Newcomb, T. Autistic hostility and social reality. *Human Relations*, 1947, 1, 69-86.
5. Thibaut, J. An experimental study of the cohesiveness of underprivileged groups. *Human Relations*, 1950, 3, 251-278.
6. Wright, M. E. The influence of frustration on the social relations of young children. *Character and Personality*, 1943, 12, 111-122.

## The Disruption and Cohesion of Groups

John R. P. French, Jr.

This paper discusses part of an experiment on the emotional behavior of small groups (1), and is concerned only indirectly with cohesion and disruption in existing sociological groups. The experiment, conducted at the Harvard Psychological Laboratory in 1939 and 1940, followed rather closely the total behavior technique and the theoretical orientation used by Lippitt in the autocracy-democracy experiments (4). The present investigation attempts to carry on this work and to develop concepts which will be useful beyond the confines of this specific experiment.

### The Experiment

The purpose of the experiment was to study the differences between two types of groups—organized *vs.* unorganized—in two specific situations, one producing frustration, the other producing fear. The present discussion is concerned only with the behavior of the groups in the frustration situation.

A total of sixteen groups was used, eight of them unorganized and eight organized. All the unorganized were composed of Harvard undergraduates who were not acquainted with one another, and were, therefore, completely unorganized at the beginning of the experiment. The first five organized groups were members of basketball or football teams from the upperclass houses at Harvard. Each team had a captain through whom the experimental session was scheduled. Many of the members within each group had played on the same team for a number of years. In addition to being organized as an athletic team, the members of each group lived together in the same House, often ate together, and were in some degree a friendship group. The remaining three organized groups were clubs from a neighborhood house in the Italian section of East Boston. They,

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too, were organized for athletics as well as being friendship groups. Each group contained six members, since six was the largest *even* number that was practicable. An even number of subjects was selected because it permitted an equal division of opinion concerning questions requiring a group decision, and hence increased the possibility of conflict within the group.

The frustration was produced by requiring the groups to solve insoluble problems. By telling the subjects that this was an experiment in group problem-solving the purpose of the investigation was concealed; they were led, in fact, to believe that all the problems were soluble within the 45 minute time limit allotted. To each group the experimenter presented three problems and read the following instructions:

The purpose of this problem-solving experiment is to discover *how fast the group can solve a problem*. Three problems are provided, but you are to solve *only one*. The group may choose which problem to work on, and it is permissible to shift to a different problem whenever the group desires. However, the whole group must work on the same problem at any given time. Thus the solution of *one problem in the shortest possible time*, depends partly on knowing which problem to choose and when to shift to another problem. The three problems (average adult level of difficulty) are: (a) the four 4's problem, (b) the disc problem, (c) the ball and spiral problem.

After reading these general instructions, the experimenter presented the problems successively with further specific instructions for each one. The group was allowed a short trial period on each problem in order to be sure they understood the rules, and to increase the possibility of conflict within the group concerning which problem to choose.

The "four 4's" was a mathematical problem which required different combinations of the digit four, taken four times, in such a way as to equal each of twenty-five numbers. The second problem was the old Hindu problem of moving a pyramid of discs, one at a time, from the first to the third of three circles without ever putting a larger disc on top of a smaller disc. The third puzzle was a large conical, spiral track with a ball to be rolled up the track to the top by tipping the platform at the proper angles. The platform had six handles—one for each subject.

It should be noted that the three problems are markedly different in kind. The "four 4's" is primarily an intellectual problem, the ball and spiral is largely a motor-skill puzzle, whereas the disc problem involves both intellectual and motor aspects. Each problem, furthermore, can best be solved by a different type of group organization: the "four 4's" is well suited for division into parts for parallel individual work; the ball and spiral requires the utmost simultaneous coordination of the entire group; while the disc problem falls somewhere between the two in regard to the amount of coordinated activity possible. Another important characteristic



of the problems is the fact that each is much more difficult than it appears to be at first, and the further one progresses the more rapidly the difficulty increases.

During the frustration situation, five observers were seated in one end of the room unobtrusively recording the behavior of the group. Six types of data were secured: (a) a check-list of various categories of behavior such as objective problem-directed behavior, aggression against others, escape from the field, etc.; (b) verbatim remarks and a running account; (c) ratings at three-minute intervals of *motivation*, *frustration*, *we-feeling*, and the *interdependence* of the group members; (d) postmeeting write-ups by each observer; (e) subjective reports in answer to a questionnaire concerning the subjects' opinions of the problems, whether they were highly motivated, frustrated, etc.; and (f) phonograph recordings of the verbal behavior during the first 10 minutes and the last 10 minutes of the frustration situation.

## Results

From these varied data, it was possible to synthesize reliable and relatively complete qualitative descriptions of each group. At the same time, much of the data was in a quantitative form, so that different groups or types of groups could be compared with one another. Before considering the quantitative results, it is desirable to give a qualitative description of one of the groups in which the frustration resulted in a disruption of the group, and another in which there was no real division of the group. These protocols will give some indication of the striking differences among the groups in every aspect of behavior which was measured.

*Case of an unorganized group.* The outstanding feature of this group was the rapid but subtle development of opposing factions. At first the group showed high social restraint and talked in a very cool and formal fashion while deciding which problem to choose. After a full minute of restrained discussion they chose the disc problem, whereupon one member (G) started to move the discs while the others watched or gave advice. The motivation and the degree of interdependence of behavior in the group members were extremely low. There was little leadership and no we feeling. After the group had good success in transferring the first few discs, soon there were signs of increasing interest in the problem, and decreasing social restraint.

R, in particular, had good insight into the problem, and soon remarked, "Wow, this thing isn't as easy as it looks." "We're not going to get anywhere," he announced during the fifth minute, but continued to give advice and help G with the moving. From this point until the end of the session, R continued to talk of the prospect of failure. At first Y, G, and B (the three members who were contributing most to the solution of the problem) considered R's complaints, but since they were still making progress, they rejected his suggestion of changing to another problem. A little later they started to ignore R, and finally during the

fourteenth minute *Y* joking retorted, "Don't be a rebel," when *R* complained that it would take three days to finish the problem. Hereafter, this label was frequently used against *R* by *Y*, *G*, and *B*, who constituted themselves an in-group. *F* belonged to the out-group with *R*, but gave him little active support. *O* remained silent. The in-group continued to work rapidly and cooperatively with little help from the others. *R* persistently tried to get the in-group to shift problems, but was always met with remarks such as, "Don't be a pessimist," "You certainly have a rebel complex!" etc.

By this time the in-group was deeply involved in the problem, and all the group members were becoming more frustrated. Joking hostility between the two factions became more open. When *R* computed that it would require 2,011 moves to complete the problem, *G* ridiculed him saying, "Think of the exercise!" and *B* remarked, "Let's shoot the mathematician and continue." By a cogent analysis of the difficulties of the problem, *R* finally managed to force a vote on whether to shift problems. *G*, however, who was a skillful propagandist, conducted the vote and managed to railroad through a decision in favor of continuing with the disc problem. By a constant use of most of the common propaganda devices, *G* and *Y* succeeded in keeping the group on the same problem until the end of the session. They said the out-group had no perseverance, accused *R* of sabotaging the progress of the group, and identified him with those who heckled Roosevelt destructively. Apparently the existence of these opposing factions was the chief reason for not shifting problems, because on the subsequent questionnaire only *one* member reported that he considered the disc problem the easiest of the three, while four members reported it was the hardest. This group, rated the lowest of all groups on we-feeling and frustration, was also low on motivation and interdependence. They rejected many more suggestions than any other group.

*Case of an organized group.* As a contrast, this protocol describes briefly part of the behavior of one of the organized groups, which was rated highest on motivation, frustration, we-feeling, and interdependence. The most aggressive of the sixteen groups, it yet rejected fewer suggestions than any other group. The group was a club called the "Victors" composed of 15 and 16 year-old Italian boys from a neighborhood house in East Boston. They took a great deal of pride in their club and in the neighborhood house. In the experimental situation, the Victors showed some restraint in the presence of the observers, but complete social freedom among themselves. The group, having chosen the ball and spiral problem, set to work with good motivation from the very beginning. They were, however, very uncoordinated and soon were freely blaming one another for their failures. The frustration, noticeable very early, continued to increase.

Under the leadership of *Y*, the group gradually became better organized and had better success on the problem. As they managed to get the ball farther up the spiral, the motivation and frustration increased, and the aggression became stronger. Some of the members started to laugh at their failures, but *Y* and *B* continually appealed to the group to "get serious" or told them to "shut up" when laughter occurred. "Let's get some teamwork," said *Y*; "after all, we're the guy's guests." With continued improvement, the outbursts of interpersonal aggression became more and more violent; yet there was good insight into their own behavior. "I can see where this game could start a big fight," said *F*. "I feel like blaming somebody," said *Y*. When all agreed with this feeling, they decided to stop blaming one another, since a failure was no one person's fault. Neverthe-

less, they were unable to inhibit their feelings, for the more they improved, the more the tension increased.

During the twenty-fourth minute there was a focalization of aggression against *F*, with *G* leading the aggression in an attempt to escape blame himself. *G* half jokingly hit *F* with his fist, and some of the others made abbreviated striking gestures. *F* tried unsuccessfully to escape the blame by appealing to the experimenter, and then suggested changing problems. When at each subsequent failure *F* was made the scapegoat, he protested loudly and withdrew from the group, to prove that they would do just as badly without him. He soon returned, however, when *F* appealed to his group pride. Nevertheless, he continued to be the scapegoat. When every member blamed everyone else, no one escaped blame; but when they all blamed the scapegoat, the others successfully escaped blame.

In spite of the strongly expressed hostility, the Victors were still a closely knit group who continued to improve. In the thirty-fourth minute, *F* got each member to give his solemn "word of honor" not even to talk. The tension, however, was too great, and one of them whispered, "I'm burning up, ya could use me for a cigarette lighter." At the next failure there was another burst of aggressive shouting. Though still becoming completely disorganized after each serious failure, the group had a remarkable ability to become reorganized by talking and encouraging one another. Starting on the fortieth minute, the Victors worked with beautiful cooperation for four minutes and got the ball almost to the top of the spiral. When it fell off, they immediately dropped the puzzle on the floor, and there was a violent burst of aggression, much of it focused on *F*. "I swear to God I didn't do anything! Everyone blames me!" moaned *F*. Retreating from the group, he refused to continue. When, however, the others immediately started to praise and encourage him, he returned and continued until the end of the session. At the end the Victors wanted to continue, and just as soon as they stopped they were again a very friendly group.

### *Quantitative Results*

The qualitative descriptions show that there were many different degrees of group disruption, varying from the division into definite opposing factions to minor temporary disorganizations of activity. It should be noted at the outset that the formation of cooperating subgroups with a division of labor is *not* a disruption of the group. On the contrary, it seems to be true in general that the more the differentiation of function, the greater the interdependence and unity of the group as a whole. As a matter of fact, the most cooperative, cohesive, and best organized of the sixteen groups in this experiment spent most of its time on the "four 4's" problem, where there was a division of labor which rarely permitted the simultaneous cooperation of all six group members.

The types of group disruption may be roughly divided into two classes: (a) those in which there was a real splitting of the group, and (b) those in which there were interpersonal aggressions and minor disorganizations of activity, without any permanent division of the group. In this experiment there were four instances belonging to the first classification: two

of these were divisions of the group into factions as described previously; the remaining instances were groups where one individual permanently left the group in order to work on the small substitute problems which had been placed off in one corner of the experimental room. All four of these cases occurred in *unorganized* groups.

The second classification, of minor disruptions of the group, may be subdivided into three categories which were recorded on the check-list: *interpersonal aggressions*, including hostility, joking hostility, blame of others, and aggressive domination of others; *temporary escape from the field*, including withdrawal from the problem, substitute behavior, cheating, and attempts to change problems; and *general disorganization* of the group activity. These minor disruptions were very frequent in most groups, though it must be pointed out that there were a few groups in which such behavior did not occur at all.

On the whole, such minor disruptions were much more frequent in the organized groups. The average number of interpersonal aggressions recorded on the check-list was 6 for the unorganized groups and 45 for the organized groups. Because there was much more aggression than could be recorded in some of the organized groups, the actual difference was probably much larger than this. Estimates by the observers ran as high as 600 aggressions in one organized group. The average number of instances of escape from the field was 12 for the unorganized and 16 for the organized groups. Though the third category of general disorganization of activity was not recorded quantitatively, it seemed to be true in general that this type of behavior was also more frequent in the organized groups.

In order to understand these differences between the two types of groups, it is necessary to summarize the obtained differences on certain other variables and to clarify the relationships among these variables. The results of the check-list, the ratings, and the questionnaires revealed that the organized groups showed definitely more *social freedom*, *we-feeling*, *motivation*, *interdependence*, *frustration*, *interpersonal aggression*, and *equality of participation* by the members in the group activity.

Because of the numerous types of data secured, it was possible to determine the validity of the measurements of some of the variables at four different levels: (a) in the total population of individuals, (b) within each group during the course of the experimental session, (c) within a single type of group such as the organized groups, and (d) in the 16 groups considered as groups.

In general, the relationships may be summarized as follows: (a) Previous organization of the group tends to produce higher we-feeling, higher interdependence of group members, more equal participation of members, and greater social freedom. (b) Increases in social freedom increase each



of these other variables and also the amount of aggression expressed against others. (c) The amount of motivation is dependent on the acceptance of the instructions, the intrinsic interest of the problems, and the existence of group goals. It increases with increasing interdependence and we-feeling. (d) If there is sufficient motivation, interference with the motivated activity produces frustration; the stronger the motivation, the stronger the frustration. (e) This frustration usually leads to aggression, though in some groups there is strong frustration, yet no aggression.

The preceding relationships help to explain the greater number of minor disruptions in the organized groups. Due to previous association, these groups had higher we-feeling, greater social freedom, and stronger group goals than the unorganized groups. Because of this additional motivation, they were more keenly frustrated when unable to solve the problems—a frustration which in turn led to more aggression, more escape from the field, and other forms of disorganization. The amount of aggression expressed was further increased by the high degree of social freedom. Due to their higher we-feeling, however, the organized groups did not actually split into subgroups, as did the unorganized groups.

Perhaps the most striking result of the experiment was the emergence of similarities of behavior among the members of a group. In some groups every member was consistently uncooperative, argumentative, and aggressive, whereas in other groups all members were just as consistently cooperative, agreeable, and friendly. A statistical measure of the similarity between groups by the method of the analysis of variance proved that the behavioral uniformity was not due to a random or systematic selection of similar members within the same groups. Instead, the interaction of differing individuals within a group seemed to create a social atmosphere which produced the same behavior in all members of that group. In other groups very different atmospheres emerged, but again all group members tended to behave alike. Thus the variability within groups was significantly less than the variability among groups. In the case of aggression, the resulting value of  $F$  was 3.92, which is well above 2.34, the 1% point of significance.

### Topological Interpretation

In formulating a topological interpretation for a given experimental result, it often happens that a number of derivations are possible for the same result. Though these derivations may all be equally adequate for the particular experiment, one may have a much wider applicability than the others. For this reason, it is advisable to consider briefly the general problem of group disruption before proceeding to the interpretation of the specific experimental results.

It seems to be true in general that every group has within it the seeds of its own destruction. That is to say, every group contains *potential* disruptive forces. Indeed, the basic definition of a group in terms of the interdependence of its members *implies* just this. If all the members are interdependent, then every member is partly dependent on others in the group, and this dependence is a potential source of frustration by others. Such frustration of individual goals by other members of the group is, in turn, an important cause of group disruption. The greater the interdependence, therefore, the greater the possibility of disruption. But this possible frustration because of dependence on others exists at the same time, side by side, with the possibility of aid from others in attaining one's own goals. Likewise, interdependence implies that the individual has other people dependent upon him; now to some extent indispensable, his existence acquires a value which it would not have otherwise.

Thus by its very nature all social living is a potential conflict situation for the individual. Marriage, for example, limits one's space for free movement and frustrates many of the goals which are attainable by the bachelor, but at the same time it facilitates the attainment of many other goals and increases the importance and status of the individual. Joining *any* group results in a similar potential conflict situation for the individual; the probability of such conflict depends not only on the degree of interdependence within the group, but also on the extent of involvement of the individual in the group. If only a small peripheral segment of the member's personality is involved, the possibility of conflict is slight. If, on the other hand, many of the individual's dominant goals are involved in his relations to the group, some conflict is almost inevitable, inasmuch as individual differences make it very unlikely that all individuals would agree on all goals and on the best path for attaining each.

It seems, then, that the disruption in any group can be handled topologically in terms of the balance between cohesive forces and disruptive forces. Usually the disruptive forces will result from the conflict of the individual's own goals and paths with those of the group.

The problem in this experiment, therefore, is to represent the frustration situation topologically and to discover the various cohesive and disruptive forces. The situation at the beginning of the frustration session for the organized and for the unorganized groups can be represented as in Figure 10.1. The group is in a decision region with three possible paths to the goal. Because all subjects accepted both the goal of solving a problem and the instructions that every member must work on the same problem, there is a force induced by the experimenter acting on the group in the direction of the group goal,  $i^x f_{gr, exp}$  and another force  $i^x f_{gr, or}$ , opposed to leaving the group. In addition, there is in the organized groups, due to previous association, an own force,  $f_{gr, or}$ , in the direction

toward the group. Members in the organized groups, therefore, are less likely to leave the group than are members in the unorganized groups, for there are two cohesive forces in the former, but only one in the latter. The actual results confirm this derivation.

The *strength* of the force in the direction to the group goal depends upon the force induced by the experimenter ( $i^+ f_{ar, ara}$ ) and on the forces corresponding to the own needs of the group ( $f_{ar, ara}$ ). The latter consists of the forces corresponding to the own wishes of the members as individuals and the forces induced by the group. Due to the higher "we-feeling" of the organized group, more of the total personality is behind the group goal in this group. In other words, the individual has to a higher degree accepted the group goal. Consequently, the motivation is stronger — that is,  $f_{Gr, GrG}^{Org} > f_{Unorg}^{Gr, GrG}$ .

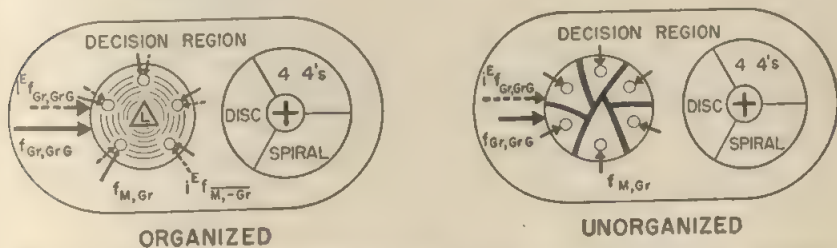


FIG. 10.1. The topology of the organized and unorganized groups in the decision situation. The dotted vectors represent induced forces; the solid vectors represent "own" forces. The large plus sign represents the group goal.

In regard to the *direction* of the force  $f_{ar, ara}$ , that is, in regard to the choice of the particular task, the following may be mentioned. The members of the unorganized group are separated by barriers of high social restraint, and there is no leader. The organized group, on the contrary, has very weak restraining barriers and is structured around a leader whose power-field affects the other members of the group. From this it follows that the decision on which problem to choose should be determined more by the leader than by the other members, as was actually the case. In either group, the final decision is dependent both on the opinions of the six members and the ability of each to influence others in the group. Thus the direction of the force  $f_{ar, ara}$  is a function of both the direction of the own force of the individual members and the power fields of these individual members.

After a group has worked on one of the problems for some time, the situation is changed. This situation for the unorganized group described previously may be represented as in Figure 10.2.

The region of working on the disc problem, *A*, has become structured into subregions corresponding to the various parts of the problem. Since

at the same time the problem situations have become differentiated, the group cannot locomote from *A* to another problem without passing through the decision region. The resistance to locomotion in *A* has increased with the increasing difficulty of the problem; in other words, there is an increased restraining force,  $rf_{Gr, GrG}$ , acting on the group in the direction opposite to the group goal. Other things being equal, the group should shift problems as soon as the perceived difficulty of *A* becomes greater than the perceived difficulty of regions *B* and *C* corresponding to working on the other problems. There is, however, an additional own force,  $f_{Gr, A}$ , due to the positive valence of finishing the disc problem. As

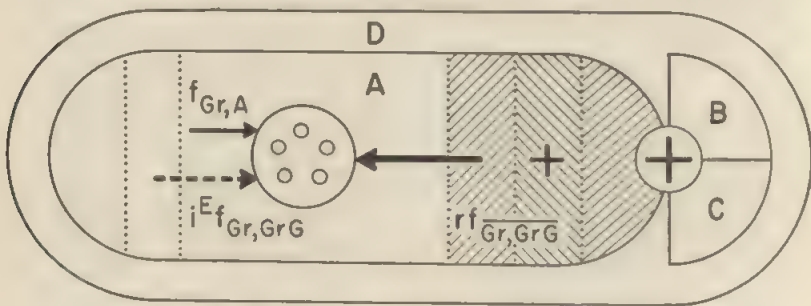


FIG. 10.2. An unorganized group under frustration.

the members become more involved, the problem is no longer merely a path to the goal but becomes a goal in itself. If the valence of this subgoal becomes greater than the valence of the experimenter-induced goal, then the group will not shift to another problem, even though it becomes obvious to the members that they will be unable to finish the present problem. Just such a structure of the field seems to have occurred for the in-group faction of this unorganized group. Hence they did not leave the problem, even though they subsequently reported that it was the most difficult of the three.

Before considering the possible resultants of the driving force in the direction of the group goal and the opposed restraining force of the difficulty of the problem, it is necessary to take up the problem of *group tension*. It was reported that certain types of similarities of behavior among group members were noted. It was found that members within the same group tended to show similar amounts of aggressive behavior, or friendly behavior, or fear, though there was tremendous variability among different groups. In deriving this result topologically, it seems that the concept of group tension might prove useful. Now, one of the basic conceptual properties of tension within the person is that it is a state of a system which tends to change so as to become equal to the state of the surrounding systems (2). It involves a relationship between neighboring



systems within the person and forces on the boundaries of these systems. Emotional tension within the person is produced by strong opposing forces acting on the person. Emotional group tension may be characterized analogously as the state of a group member such that it tends to spread to the surrounding members. This characterization should be limited to cases of group tension produced by opposing forces acting on the group. Conceptually, then, any difference in the states of tension of the group members involves forces acting on the boundaries between members.

The fact that members of the same group tend to show similar amounts of aggression may be considered as a case of the spreading of tension from

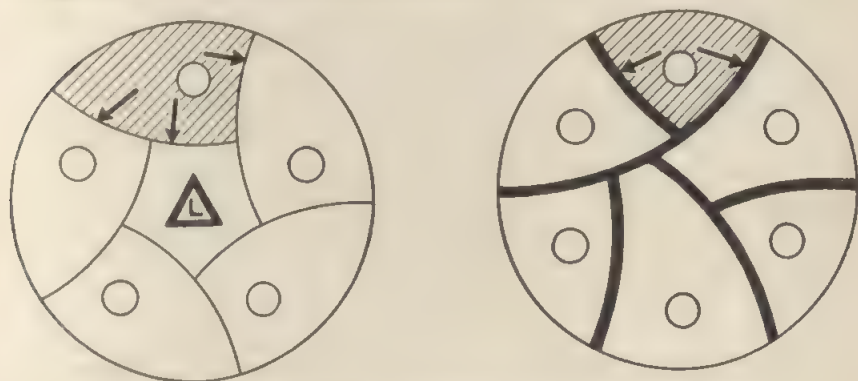


FIG. 10.3. Group tension in organized and unorganized groups.

one member to another. Insofar as a group is a whole composed of interdependent parts, one should expect that the spreading of tension in the group will depend on the degree of communication among members, that is, on the character of the walls between members. The difference in structure between the organized and unorganized groups is represented in Figure 10.3.

It follows from this that tension would spread more easily in the organized groups, for there are weaker walls between members. Operationally the strength of the walls can be coordinated to the amount of social restraint. Accordingly, when there is tension in the group, there should be more equal tension among the members of the organized groups. The actual results confirm this derivation; the individual differences in both frustration and fear are smaller within the organized groups. The representation of the leader as occupying a central position in the organized group permits the derivation of his greater influence due to the fact that he is in a neighboring region to every other member.

Though the concept of group tension is not completely satisfactory, its usefulness is proved by the fact that certain relationships in the experi-

mental data were discovered only *after* they were derived from this concept. Zeigarnik has shown, for example, that great increases in the emotional tension of the person as a whole render ineffective the walls between systems within the person (3, 13). From the conceptual properties of group tension one must predict an analogous result in groups. If a group is placed in a situation with very strong opposing forces, the resulting group tension should destroy the walls between members so that social restraint is diminished. The results for the unorganized groups showed this effect very clearly; as frustration increased, the social restraint decreased, until at high levels of tension there was relatively little

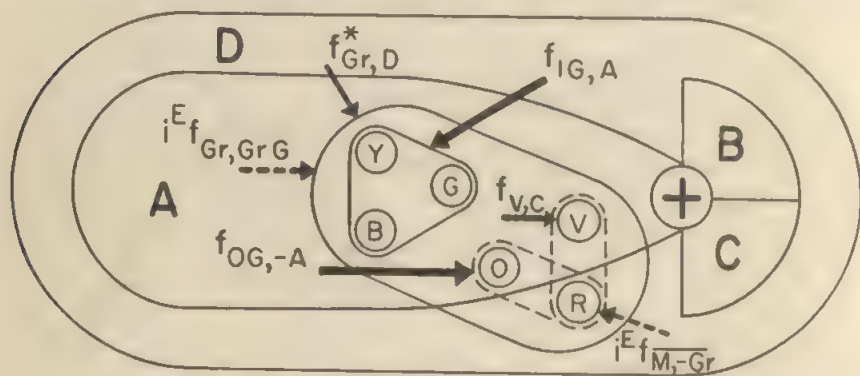


FIG. 10.4. Topological representation of a case of intragroup conflict.

restraint. As soon as the problem was over, however, the "bars were up again" and the social restraint returned. But when the fear situation occurred, the very strong opposing forces again produced high group tension which resulted in a very marked decrease in social restraint. It is clear, therefore, that the degree of communication between members depends partly on the state of emotional tension of the group.

One of the common results of group tension is intragroup conflict. This occurs when the opposing forces acting on the group produce in the members resultant forces which are opposed to one another. The unorganized group described above is a case in point. The frustration soon resulted in opposing member forces and intragroup conflict. The situation towards the end of the experimental session is represented in Figure 10.4.

The group has divided into two subgroups: a fairly cohesive in-group composed of *Y*, *G*, and *B*, and a less cohesive out-group centering about *R*. The group is in the region *A*, the disc problem, with the exception of *R*, the rebel. He has given up trying to solve the problem, which has now acquired a negative valence, and is trying only to get the group to shift problems. That is to say, *R* is in the decision region, and there is a strong

resultant force on the out-group  $f_{og, A}$ , in the direction away from region  $A$ . For the in-group, however, there is an opposing force,  $f_{ig, A}$ , in the direction of the disc problem, which has for this subgroup a positive valence of its own.

The differing strengths of the various resultant forces involved in the intragroup conflict depend on four main factors: (a) the direction and strength of the "own" forces of each member as an individual; (b) the direction and strength of the experimenter-induced forces; (c) the well-being or the potency of membership in the group as a whole, i.e., the degree to which the group can induce goals in the members; and (d) the potency of membership in the subgroups.

Thus the force on the in-group in the direction toward problem  $A$  ( $f_{in, A}$ ) is strong, partly because of the "own" forces corresponding to the intrinsic interest of the problem, and partly because of the very high potency of the subgroup as compared with the potency both of the group as a whole and of the experimenter-induced goal. For the out-group, on the contrary, the potency of the subgroup is low; consequently,  $R$  was unable to induce strong forces away from  $A$  in the other two members. At the same time, the strength of the experimenter-induced forces and the potency of the group as a whole were fairly high for the out-group. Since the region  $A$  was not seen as the distinguished path to the group goal, this subgroup attempted to shift the group to a different problem. A minor factor contributing to the force  $f_{og, A}$  was the "own" force of  $V$  in the direction toward the spiral problem ( $f_{r, c}$ ). The resultant of the conflicting forces  $f_{ig, A}$  and  $f_{og, A}$  was a force in the direction of the decision region,  $f_{gr, D}$ . The locomotion into the decision region resulted in a decision to continue on problem  $A$ . This frustration of the out-group, however, did not lead to a complete split into two separate groups because of the strength of the forces  $i^k f_{gr, D}$  acting on the out-group. Nevertheless, the conflict between the two subgroups did lead to a slight amount of mutual aggression between the factions.

At first sight, this representation of the conflict situation may seem unduly complicated. As a matter of fact, it is somewhat oversimplified. Only by the use on different levels of concepts which may be applied simultaneously to individuals, to subgroups, and to groups is it possible to avoid the incomprehensible complexity necessarily resulting from the separate consideration of each individual. An adequate representation of this intragroup conflict situation exclusively in terms of individual forces would require at the very least 21 different forces.

### Summary

The degree of disruption in any of the 16 groups in this experiment can be derived topologically from the balance between the disruptive forces

and the cohesive forces. The disruptive forces fall into three main classes: (a) Under these experimental conditions of group frustration, the most important elements of disruption were the conflicting forces which resulted when different members or subgroups saw differing problems as the distinguished path to the *same* goal. (b) Less frequently, there were conflicting forces corresponding to different goals among the members. This situation usually arose when two or more problems acquired a positive or negative valence for different members, in addition to being paths to the goal. Sometimes, however, one or more of the conflicting valences was quite outside the experimental situation. (c) Finally, there were disruptive forces not directly related to the group goal. These included forces in the direction of aggression against others, rivalry for status, interpersonal dislikes, etc., due largely to frustration by others. Such behavior on the part of one member usually led to similar behavior in other group members; that is, it produced group tension. The reason this process did not produce more serious disruption is that the groups most frustrated and most aggressive were the organized groups where the cohesive forces were also the strongest.

#### REFERENCES

1. French, J. R. P., Jr. Organized and unorganized groups under fear and frustration. *University of Iowa Studies in Child Welfare*, 1944, 20, 229-308.
2. Lewin, K. *The conceptual representation and measurement of psychological forces*. Durham, N. C.: Duke Univ. Press, 1938.
3. Lewin, K. *Field theory in social science*. New York: Harper, 1951.
4. Lippitt, R. An experimental study of the effect of democratic and authoritarian group atmospheres. *University of Iowa Studies in Child Welfare*, 1940, 16, 43-195.



**Part Three**

**GROUP PRESSURES AND GROUP STANDARDS**



## Group Pressures and Group Standards: Introduction

In the book *Up Front*, Bill Mauldin states that combat outfits "have a sort of family complex." The men know what is expected of them and readily accept the group pressures to behave in a certain way while they are group members. He says: "Combat people are an exclusive set, and if they want to be that way, it is their privilege. They certainly earn it. New men in outfits have to work their way in slowly, but they are eventually accepted. Sometimes they have to change their way of living. An introvert or a recluse is not going to last long in combat without friends, so he learns to come out of his shell. Once he has 'arrived' he is pretty proud of his clique, and he in turn is chilly toward outsiders" (6, 58).

As soon as a child is old enough to play with groups of other children he meets similar influences. A boy, for example, must not act too differently from his friends if he is to be accepted as a member of the gang. A girl, especially in adolescence, has to deal with the conflicts created for her as she tries to dress in the current "rage" of her school crowd in the face of objections from startled parents. Indeed, one of the difficult tasks in growing up, as described by Tryon (14), is that of correctly sensing the new behavior expected by one's peers at various ages.

Workers may agree on an acceptable speed of production, and exert pressures on those who differ from this rate so that they will return to the standard of the group. This group norm is often seen by management as an unwarranted restriction of output which they find it difficult to overcome. If the worker should sympathize with management's views in the matter, he is placed in a conflict of loyalties between his peers and his bosses. Among college students this same phenomenon occurs when the "eager beaver" is reminded that "a C is a gentleman's grade." In this fashion average students indicate to the honor scholar that his behavior is too different from theirs to be acceptable, despite their professor's hopes in the matter.

Some groups consciously and deliberately set out to exert pressures for uniformity of behavior and attitude among their members. We expect them to do so when we join them. Thus churches, political parties, character building agencies, school clubs, and others are eager to influence

the membership to behave in accordance with certain norms, and everyone grants them the privilege of trying to do so. Other more informal groups also exert an influence over their members, but often without anyone's consciously intending to do so and without the awareness of the members that it is happening. Neighbors, bridge clubs, fishing companions, and luncheon associates; those, in short, who see each other often even though they have not created any formalized social structure, may also exert, through informal group standards, an important influence over each member's behavior.

The purpose of this chapter is to examine some of the current theories and findings concerning the way in which these pressures toward uniformity operate. Under what conditions do they occur? What functions do they serve? What is it that increases or decreases the strength of their influence?

### **The Social Scientist's View of These Events**

For years the writings of anthropologists and sociologists have served to document the similarities of behavior and attitudes which occur among the members of one culture as compared to another. The Middletown books (5) and the Yankee City series (15) show how people living in one part of a city may think and act quite alike, and yet very differently from those on the other side of town.

How similarities of behavior such as these result from forces which the group puts upon its members has also been described. Roethlisberger and Dickson dramatically recount the interactions and resulting conformity among workers in a factory (10). The studies of delinquent gangs clearly portray the operations of group codes. Thrasher (13, 291), for example, says: "Opinion in the gang manifests its pressure in the variety of methods through which group control is exerted, such as applause, preferment and hero-worshipping as well as ridicule, scorn, and ostracism . . . the member who has broken the code may be subjected to a beating or in extreme cases may be marked for death."

Others, such as Shaw (11), Whyte (16), and Zorbaugh (17), also note the vigor used in the enforcement of group standards in gangs. Newcomb (8) found similarities and changes in political belief on a college campus which are interpreted as the result of pressures upon the students to conform to the standards of the campus community.

There have been many studies showing the existence and importance of group pressures. The classic study by Sherif (12), for example, demonstrated that, in a situation in which the individual is unable to tell if his answer is right or wrong, he is almost completely dependent upon the group for selecting a response.



It seems clear, then, that similar behavior, attitudes, and opinions occur among the members of any enduring group. What may be the causes of these similarities? At least three explanations seem plausible: (a) Membership in a group determines for an individual many of the things he will learn, see, do, think about, and so on. The nature of the stimuli in the environment of a person are in large part affected by his group membership. A member of the Progressive Party, for example, has different facts and interpretations of these facts placed before him than does the person who belongs to the Sons of the American Revolution. Because of the relatively restricted range of events provided by a group for the members, they come to know, perceive, and do things in a somewhat similar fashion. (b) An individual may act like others in the group because they are attractive to him and he wants to be like them. (c) A person may behave in a manner similar to the rest of the group because he fears punishment, ridicule, or rejection by the members unless he does act as they do.

It is apparent, then, that at least some of the similarities of behavior among group members result from forces on the members for them to conform. What functions do these forces serve?

### *The Functions of Forces toward Uniformity*

Although the functions served by uniformities among members are not definitely known, two kinds seem probable: (a) to help the group accomplish its purposes, and (b) to help the group maintain itself as a group.

In regard to the first, Festinger (Chap. 15) theorizes that pressures toward uniformity among members of a group may occur because uniformity is considered desirable or necessary in order for the group to achieve its goal. If a basketball team is to win games, for example, it is important that all the players practice shooting baskets and keep up their skill. Similarly, the members of the canvass committee for a church must each see a number of persons if a sufficient budget is to be collected for the year's operations. Festinger points out that the strength of the pressures toward uniformity should be greater the more the members see that uniform behavior will help the group accomplish its purposes. The strength of the pressures toward uniformity should also be greater, the more the various members are dependent on the group for reaching their own goals.

In regard to the second, some group standards may simply function as a means for helping the group to maintain itself. For example, the requirement that members regularly attend meetings, or wholeheartedly support the party platform, are forces which serve to assure that the group will continue to exist as an entity. Bales states in Chapter 3 that the maintenance of the group is one of the central reasons for many of the inter-

actions which occur among members. One way of strengthening the group is to make sure that "social reality" is similar for all of the members so that the group is not split by factions and disagreement. Another way is to define certain rules concerning the relations of members toward one another and the loyalty of the members toward the goals, ideals, or values of the group. The inductions from these norms or standards on the members, then, assure uniformity of the members in order that the group may continue to survive.

### *The Strength of Forces toward Uniformity*

Asch (Chap. 12) and Gorden (Chap. 13) have shown that in some cases the strength of the pressures for uniformity is apparently weak while in other instances it is near to irresistible. What determines the strength that such pressures possess? Festinger (Chap. 15) suggests that a primary determinant is the amount of attractiveness that a group has for the member. If the group is extremely attractive to him, he will be more likely to conform to pressures toward uniformity than if it is not. In support of this proposal are the findings of Bovard (Chap. 14) concerning the effects of two styles of leadership. He shows that a group-centered leader is more likely than a leader-centered leader to create a condition in which the group pressures on the members develop uniformity. Specifically, groups with a group-centered leader are more friendly, communicate with one another more readily, like their groups better, and develop more similar judgments. Another determinant of the strength of group pressures is proposed by Schachter (Chap. 17) who states that issues which are important to the group set up stronger pressures to uniformity than do less important topics.

We can add, on the basis of work done by Asch (Chap. 12), that pressures for uniformity may be especially strong if a member sees that the group is unanimous against him. Pressures also increase as the absolute size of the unanimous opposing group increases, at least within limits.

It is possible, however, that social pressures per se may not be strong enough. In some cases, perhaps in all, there must be some perception of the consequences which will result if one does not conform. The earlier quotation from Thrasher is suggestive here. Groups have the possibility of punishing the deviant and rewarding the conformer. In Chapter 17 Schachter describes an experiment in which deviants are psychologically rejected by the group. This is the implied threat which may exist behind all pressures for uniformity.

Up to this point, we have spoken of group pressures that produce similarities of behavior. It is worth special note, however, that groups may develop a standard which requires different people to do different things.

Thus, the pressures put on a new member, or a less skilled member, may be different from those directed toward a veteran or highly skilled person. Also, groups may sometimes agree that they will not allow pressures for uniformity to develop in certain areas of the group's life in order, for example, that creativeness be encouraged or that freedom of thought be respected.

In summary, the strength of the force to conform is determined by the strength of the attraction which the group holds for the member, the importance of the issue on which conformity is being demanded, the awareness that the group's standard is unanimously supported by others, and the size of the group supporting the standard. Though the strength of the force may be very great, and the threat of expulsion for nonconformity may be apparent, some persons may nevertheless not conform. Let us turn to that problem.

### *Some Yield, Others Resist: Why?*

A vivid illustration of individual differences in the degree to which persons conform to group pressures is offered by Crutchfield (3). In a laboratory situation groups were given the task of solving a jigsaw puzzle. Each individual was expected to solve his own and to help others solve theirs by obtaining pieces from others and providing pieces for others. It was perceived by the subjects as a mutually helpful situation with the common group goal of having all members solve their own puzzles. The experiment was contrived, however, so that each person was placed in a conflict arising from competing demands of cooperation with other members of the group and working toward his own "most natural" solution. The length of time required to resolve this conflict was a primary measure. Some members were ready to yield to this group pressure very early while others held out for a much greater length of time. Similar individual differences are reported by Asch (Chap. 12) in an experiment where pressures were placed upon subjects to modify their judgments of the apparent length of lines. A number of reasons may account for such individual differences.

*Personality characteristics.* There may be personality differences between those who conform and those who do not. This is suggested by Asch (Chap. 12) who offers several case studies to show the difference in the behavior and personality among the ready yielders and the reluctant conformers. Gorden (Chap. 13) also provides several brief word sketches of persons who bow to their perception of the group's norm as compared to those who do not. And the major purpose of Crutchfield's experiments is to explore the differences of personality between the ready and slow yielders to group needs.

*Pressures exerted differentially.* One person may receive more pressure than others. Schachter, for example (Chap. 17), reports that the deviant receives more attention, and thus presumably more pressure than the nondeviant. He also finds that the group effort to change a person will continue only as long as there is some indication that the person is likely to change. If he is very stubborn, the group members eventually give up in their attempts to influence him. In addition, if the person is liked by the members of the group he is more likely to be subjected to influence pressures than if he is not liked, according to a study done by Back (1). It is also probable that persons with high prestige will be less likely to feel the full impact of group pressure than will those with little prestige, even though they are a more likely target of communication (Kelley, Chap. 30).

*Amount of pressure may be differentially perceived.* Gorden (Chap. 13) states that some of the subjects with whom he worked were not aware of any group pressures while others felt a great deal, although both types of persons were members of the same group. It is likely, therefore, that some persons will conform more readily than others because they are more prone to perceive that the group is putting pressure upon them.

*Group more attractive to some than to others.* A group is not equally attractive to all of the members. If it is highly attractive to a person, he will wish to remain a member. Thus, when pressures toward uniformity are put upon him, with the implied threat that he will be rejected if he does not conform, he will be ready to yield in order that he not be excluded from the group. For those who feel that the group has little attraction to them, pressures to conform and the implied threat of exclusion do not so readily force them to conformity, since they feel that rejection from the group is not too difficult to accept. In general, a group may exert pressures toward uniformity only as great, but no greater, than the strength of attractiveness that the group holds for a given member. This is the thesis of Chapter 17.

### *The Nature of the Punishment for Nonconformists*

Earlier we said that uniformity of behavior may occur either because the group members like each other and thus want to be similar, or because they wish to avoid punishment for not behaving in a given fashion. Most of the discussion up to this point has been concerned with the nature and effectiveness of pressures toward uniformity growing out of the fact that the individual is attracted to the group. But individuals are often in groups which they are not able or allowed to leave. How do the pressures for conformity in the latter "restrained" situation differ from those



in the attractive group? More specifically, how does the threat of punishment for deviation differ in these two situations?

As an example, let us suppose that a student is allowed in one class to join a work group of his own choice. In another class he is assigned to a group by the teacher and is told that transferring from one group to another is not permissible. The major difference in these two groups is that in the former case the student chooses a given group or project on the basis of its attractiveness for him, and he may leave it if he wishes. In the latter case, the group to which he is assigned may or may not be attractive to him, but regardless of his feelings he may not leave the group.

When the person remains in the group because it is attractive, the threat of rejection by the members is a powerful potential punishment for nonconformity, but its strength depends upon how much the member is attracted to the group. In the group with the restraining forces against departure, however, the individual is "held" in the group and it can exert as much pressure as may be necessary in order to get uniformity of behavior among the members. Thus the power of the group over the member in some churches, military organizations, political parties, and other institutions which are able to develop strong restraining forces, stems more from the strength of these restraining forces than from the attractiveness of the group.

In real life, of course, there are various blends of these two extremes just cited. Although it is highly unlikely that pure cases of the two can often be found, it is worth while to examine further how these two types of situations differ.

It may be proposed that the group whose members are not able or allowed to leave will develop more overt or noninvolved conformity than the group whose members remain because they are attracted to it. In the restrained situation, the individual knows that he must conform sooner or later. He may develop feelings of resistance, or behavior and beliefs intended to protect him from the consequences of the pressures put upon him. But in the end he will yield—at least insofar as others can tell. In the attractive group, however, there is always the possibility of leaving the group if he does not like the nature of the social influence being exerted upon him. Thus, any decisions to conform with the group are made on the basis of his own motives and not simply to satisfy others who have power over him. It should be expected, then, that the group with restraining forces will obtain overt conformity of behavior, but that only the attractive group will develop genuine changes of attitude and motivation.

It has been observed that pressures which originally stem from a group which one cannot leave can become transformed into forces which the member heartily accepts. The demands made upon a draftee, for example,

which may originally be perceived as impositions may eventually become strong group standards within his group. How this happens, however, and the conditions which cause it are not clearly understood at present.

### *Who Exerts the Pressures for Uniformity?*

This is a relatively untouched area requiring further research. Some organizations create a special role with the assigned duties of enforcing the pressures for uniformity; for example, the sergeant at arms, the protocol expert, or the military police. Sometimes the leader is expected to enforce the group standards, and part of his functions may be viewed as the source of suggested group standards where none exist, but are needed. When such special functionaries are not available, it seems reasonable to suppose that certain group members may be more concerned with the invoking of group standards than others. Thus we see the overorthodox, the fanatic, or the superpatriots in many clubs and societies. There are no data, however, to help us do more than speculate about this problem.

### *How Group Pressures Originate and Change*

Here again, there is little evidence to guide us. We have observed groups in which the necessity of effective movement toward the group's goals creates an atmosphere in which the group is ready to make explicit agreements about some standards. It is obvious, however, that many standards are developed without any conscious awareness of their existence, and yet they function as effectively as those norms which have been made explicit. Examples of the latter type are such standards as ways of dressing, or ways of greeting members. Merei (7) calls these *traditions*, and reports that such ways of behaving have even more potency in determining the behavior of the members than do the suggestions of strong leaders when they attempt to influence the group to change.

Once the group pressures are set in such a fashion as to create group standards, the uniform behavior is difficult to change. The resistance to changes in health habits, farming practices, production methods, and many other ways of life provide full testimony for this fact. Yet, there is evidence that they do change and can be changed.

Coch and French (Chap. 19), for example, describe how a group of workers lowered their production rate, and exerted strong pressures for conformity to this reduced speed. The creation of this new standard occurred as a result of dissatisfaction stemming from a transfer to a different job which was no more difficult than the former one. Other groups of workers, who were not so dissatisfied by a similar transfer, changed their group standards also, but in this case the change was in the opposite

direction. They demanded greater speed of production. The major variable determining the amount of satisfaction in the two groups was the amount of opportunity they had to participate in making decisions about how the work transfer should be carried out. Those workers who participated in group discussions about the transfer raised their production rate after the transfer, whereas those who were simply notified about it lowered their production rate. The standards of these groups apparently changed in response to changes in the relation of the group to its environment.

### **Group Decision as a Method of Creating Changes in Behavior**

Although group standards can change, the more striking characteristic about them is their enduring quality. This has led to a number of experimental demonstrations in which it has been shown that if an entire group makes a decision about some change in behavior which the members will make, this agreed upon behavior will occur even when the members are away from the group. Typical illustrations of the method are found in Chapter 21 by Lewin.

We can say, then, with some assurance that group decisions are more effective in changing behavior than lectures or group discussion without any decision, but it is not entirely clear what it is that makes them work. It has been assumed by some that the public commitment to carry through the behavior decided upon by the group creates an awareness of the expectations that the members had for each other, thus creating forces on each member to comply with these widely felt sentiments. These pressures for uniformity thus serve to develop a group standard. In line with Festinger's theory briefly described above (and more fully in Chap. 15), one would assume that more cohesive groups would develop stronger group standards as a result of a group decision. This notion, however, has never been adequately tested.

A recent study by Bennett (2) casts doubt on the importance of public commitment in group decisions. She used small groups which met for a brief period. Comparing the results of several influence methods, she finds that the group discussion and the public commitment aspects of group decisions do not significantly increase the probability that the behavior agreed upon by the group will be carried out. The important features are the fact that a decision has been made and the degree to which group consensus is obtained. These two variables account for most of the change brought about by group decision. The finding concerning the importance of group consensus is in agreement with Asch's conclusion that group members are more likely to conform if there is unanimity among the group on a proposal.

### Overlapping Group Memberships

Thus far we have discussed group standards as though each individual were a member of one and only one group. In reality, of course, persons belong to many groups, often with quite contradictory norms. The business man may listen on Sunday to a sermon concerning the way to deal with his fellow men and heartily endorse these views. On Monday he may attend a session of the Society for Sharp Business Practices and embrace the opposed opinions of this group just as readily. Although membership in different groups may create dilemmas and contradictions for the individual, it is also commonly observed that the majority of people function efficiently as members of many groups. Often they may be only vaguely aware of the inconsistencies of their beliefs, or manage to resolve the conflicts without being aware of them at all.

In Chapter 18 Killian vividly describes how these overlapping loyalties and "cross pressures" can become a keen conflict for an individual, when he is forced to choose among them in some emergency such as a community disaster. In such a situation, he found that previously nonconflicting memberships suddenly presented the person with the necessity of making a choice which was difficult for him.

We know very little about how contradictions stemming from multiple group membership are resolved. Nor is there evidence concerning the conditions which may cause one group norm to override all the others. Newcomb (9) has presented an excellent statement of the problem and a summary of the available findings. It is clear that more research is needed about matters such as these before we shall have a complete understanding of the influence of group pressures on the behavior of the individual.

### Overview of Research Reported in this Section

The research on group pressures and group standards has been conducted in a wide variety of ways and places. The work reported in this section has been chosen to illustrate different approaches and methods used in determining some of the cause and effect relations in the dynamics of social influence.

Asch (Chap. 12) has observed both laboratory groups and school classes. He examines the conditions which cause a person to resist or yield to the pressures toward uniformity imposed upon him by a group. The technique he uses requires the subjects to report which of two parallel lines is the longer. In all of his investigations, previously-briefed participants are requested to give incorrect answers. The subject is then placed in a group in which the reports made by others do not agree with his perception of the matter. By varying the number of "assistants" who give the incorrect



answers, the clarity of the differences between the lines, and other factors, he shows that individuals are less likely to deviate from the group (that is, more likely to go against the evidence of their own senses) when the difference is most difficult to perceive, when the group is unanimous against him, and when those in opposition increase in numbers.

It is an open question as to whether or not these subjects would have violated their own best judgment if they had not been required to state publicly what they believed. Will a person change his private opinions under group pressure if he knows that the group will never learn how he feels?

The answer to this question cannot be given unequivocally. It may be different, for example, when the member remains in the group because he wants to and when he stays under coercion. In Chapter 13 Gorden examines the general question in a group where members may leave if they wish. He attempts to determine whether the private opinions of group members are different from those which they state aloud in the group, and if the private opinions change as a result of knowledge of the public opinions of the rest of the members. The research was done in a cooperative house in which the members knew each other well. They were asked to state their private opinions about Russia on a standardized attitude scale. Then, in a group meeting, each member was asked to state publicly his attitude on the same issue. Following the meeting, once again each member made a private statement concerning his attitude. Gorden finds that a large proportion of the group did have private opinions which were different from those publicly stated. Their public statements appear to be a compromise between their private opinions and their conception of the group norms on this attitude. An awareness of the actual attitudes of the members as stated aloud in the meetings does not appear to influence the private or public opinions as much, Gorden believes, as do the individual's subjective feelings and imagery regarding the group norms, regardless of how accurately this feeling and imagery may reflect what he has heard aloud from others. It appears, then, if Gorden's interpretation is correct, that a person's attitudes are influenced not so much by what people say or do, but more by what he perceives the group norm to be on the issue at hand.

The influence of awareness of a group norm on the private opinions of members is also examined by Bovard in Chapter 14. The procedure was to ask the students in several small classes to estimate anonymously the length of a green paper rectangle. The experimenter then informed them of the individual estimates and the average for the group. Following this, they were asked once again privately to estimate the length of the rectangle. On the second estimation, after hearing the group average, the subjects shifted their opinions toward the group norm. In this case, in

contrast to the findings by Gorden, awareness of the objective facts concerning the opinion of the group was sufficient to change the members' opinions.

Some of the classes in Bovard's experiment were led by a group-centered discussion leader, while others had a leader-centered teacher. Bovard predicted that the group-centered classes would shift more in the direction of the common norm than would the leader-centered units. His prediction is supported by the findings and he attributes his result to the greater member-member interaction in the group-centered classes and the greater **friendliness developed as a result.**

Bovard also notes that the group-centered units were more attracted to their groups. Elaborating on this point, in Chapter 15, Festinger develops the theory which has been briefly described earlier in which he explains how the cohesiveness of a group will determine the power that a group has in requiring uniformity of behavior among its members.

In Chapter 16 Festinger, Schachter, and Back examine the strength of group norms within groups of varied cohesiveness in two housing projects. By means of interviews repeated over a period of time, they determine the cohesiveness of the various courts and buildings in the projects and the attitudes of the residents toward a tenants' organization. They show that the cohesive courts are likely to have more uniformity of attitudes toward the organization and more uniformity of behavior in the degree to which they participate in the organization. One of the important findings is that persons who are deviant from the norm within their court are less likely to be accepted as friends by the rest of the persons living there.

This latter finding was subjected to more rigorous study in a laboratory study by Schachter (Chap. 17). Using college students as his subjects, the experimenter invited them to join a club organized for the purpose of discussing topics which are of lively interest to students. A paid participant also attended the club meetings and was instructed to express opinions in the meeting which were quite different from those being stated by the rest. The data for this study were collected by observers at the meeting and by questionnaires completed by the members. Schachter's findings clearly demonstrate that the deviant is rejected by the members of the group and that this occurs more readily in groups of higher attractiveness. The deviant individual is also more likely to be rejected in the clubs discussing a topic relevant to the objectives of the group than in those dealing with an irrelevant issue.

Will a person persist in conforming to the norms of a group even when he is in another group? What will he do if the norms of the two groups are contradictory? Killian describes in Chapter 18 the manner in which the forced choice among the loyalties to different groups became a conflict for members of four Southwestern towns during disasters. From interviews

with persons in these communities, in which they were asked the first things they thought of and did immediately after the disaster, he finds that the choice required of the greatest number of individuals was between helping their families and assisting some other group such as their company. It appears that the family usually has the strongest attractiveness for an individual, and that it therefore demands primary allegiance. Whether or not the same findings would be obtained with respect to pressures toward uniformity of behavior is not certain, though quite probable.

The final three chapters in the section discuss experiments attempting to change the behavior of individuals as a result of group decisions. The logic behind these studies is that a group norm is the property of the group as a whole. If one is to change this norm and thus the behavior of individuals, it can best be done by having the entire group participate in the decision to make the change. The results of these experiments demonstrate the effectiveness of group discussion followed by group decision. In Chapter 19 Coch and French describe changes in production standards among the workers in a garment factory. Levine and Butler, in Chapter 20, provide a clear and concise example of a group decision experiment among foremen in an industrial setting. They show that a lecture followed by a question-answering period was not at all effective in changing the attitude of the foremen, but that a group discussion and decision on the same issue worked effectively. Finally, Lewin summarizes in Chapter 21 a number of group decision experiments conducted in different settings, and suggests some of the factors which may contribute to their effectiveness.

#### REFERENCES

1. Back, K. Influence through social communication. *Journal of Abnormal and Social Psychology*, 1951, **46**, 9-23.
2. Bennett, Edith. The relationship of group discussion, decision, commitment and consensus to individual action. Unpublished doctoral dissertation, Univ. of Michigan, 1952.
3. Crutchfield, R. Assessment of persons through a quasi group-interaction technique. *Journal of Abnormal and Social Psychology*, 1951, **46**, 577-588.
4. Killian, L. M. The significance of multiple group membership in disaster. *American Journal of Sociology*, 1952, **57**, 309-314.
5. Lynd, R., & Lynd, H. *Middletown in transition*. New York: Harcourt, Brace, 1937.
6. Mauldin, B. *Up front*. Cleveland: World Publishing Co., 1944. Reprinted by permission of Henry Holt & Co., holders of copyright.
7. Merri, B. Group leadership and institutionalization. *Human Relations*, 1941, **2**, 23-39.
8. Newcomb, T. M. *Personality and social change*. New York: Dryden Press, 1943.

9. Newcomb, T. M. *Social psychology*. New York: Dryden Press, 1950.
10. Roethlisberger, F., & Dickson, W. *Management and the worker*. Cambridge: Harvard Univ. Press, 1939.
11. Shaw, C. *The jack roller*. Chicago: Univ. of Chicago Press, 1939.
12. Sherif, M. *The psychology of social norms*. New York: Harper, 1936.
13. Thrasher, F. *The gang*. Chicago: Univ. of Chicago Press, 1927.
14. Tryon, Caroline. Evaluation of adolescent personality by adolescents. *Mono-graphs of Society for Research in Child Development*, 1939, No. 4.
15. Warner, I., & Lunt, P. *The social life of a modern community*. New Haven: Yale Univ. Press, 1941.
16. Whyte, W. F. *Street corner society*. Chicago: Univ. of Chicago Press, 1943.
17. Zorbaugh, H. *The gold coast and the slum*. Chicago: Univ. of Chicago Press, 1929.



## Effects of Group Pressure upon the Modification and Distortion of Judgments

S. E. Asch

We shall here describe in summary form the conception and first findings of a program of investigation into the conditions of independence and submission to group pressure. This program is based on a series of earlier studies conducted by the writer while a Fellow of the John Simon Guggenheim Memorial Foundation.

Our immediate object was to study the social and personal conditions that induce individuals to resist or to yield to group pressures when the latter are perceived to be *contrary to fact*. The issues which this problem raises are of obvious consequence for society; it can be of decisive importance whether or not a group will, under certain circumstances, submit to existing pressures. Equally direct are the consequences for individuals and our understanding of them, since it is a decisive fact about a person whether he possesses the freedom to act independently, or whether he characteristically submits to group pressures.

The problem under investigation requires the direct observation of certain basic processes in the interaction between individuals, and between individuals and groups. To clarify these seems necessary if we are to make fundamental advances in the understanding of the formation and reorganization of attitudes, of the functioning of public opinion, and of the operation of propaganda. Today we do not possess an adequate theory of these central psychosocial processes. Empirical investigation has been predominately controlled by general propositions concerning group influence which have as a rule been assumed, but not tested. With few exceptions, investigation has relied upon descriptive formulations concerning the operation of suggestion and prestige, the inadequacy of which is becoming increasingly obvious, and upon schematic applications of stimulus-response theory.

Basic to the current approach has been the axiom that group pressures

From a chapter with the same title in H. Guetzkow (Ed.), *Groups, leadership, and men*. Pittsburgh: Carnegie Press, 1951. Reprinted by permission of the author and the publishers.

characteristically induce psychological changes *arbitrarily*, in far-reaching disregard of the material properties of the given conditions. This mode of thinking has almost exclusively stressed the slavish submission of individuals to group forces, has neglected to inquire into their possibilities for independence and for productive relations with the human environment, and has virtually denied the capacity of men under certain conditions to rise above group passion and prejudice. It was our aim to contribute to a clarification of these questions, important both for theory and for their human implications, by means of direct observation of the effects of groups upon the decisions and evaluations of individuals.

### The Experiment and First Results

To reach our objective, we developed an experimental technique which has served as the basis for the present series of studies. We employed the procedure of placing an individual in a relation of radical conflict with all the other members of the group, of measuring its effect upon him in quantitative terms, and of describing its psychological consequences. A group of eight individuals was instructed to judge a series of simple, clearly structured perceptual relations—to match the length of a given line with one of three unequal lines. Each member of the group announced his judgments publicly. In the midst of this monotonous “test,” one individual found himself suddenly contradicted by the entire group, and this contradiction was repeated again and again in the course of the experiment. The group in question had, with the exception of one member, previously met with the experimenter and received instructions to respond at certain points with wrong—and unanimous—judgments. The errors of the majority were large (ranging between  $1\frac{1}{2}$ " and  $1\frac{3}{4}$ " ), and of an order not encountered under control conditions. The outstanding person—the critical subject, whom we had placed in the position of a *minority of one* in the midst of a *unanimous majority*—was the object of investigation. He faced, possibly for the first time in his life, a situation in which a group unanimously contradicted the evidence of his senses.

This procedure was the starting point of the investigation and the point of departure for the study of further problems. Its main features were the following: (a) The critical subject was submitted to two contradictory and irreconcilable forces: the evidence of his own experience of an utterly clear perceptual fact, and the unanimous evidence of a group of equals. (b) Both forces were part of the immediate situation; the majority was concretely present, surrounding the subject physically. (c) The critical subject, who was requested together with all the others to state his judgments publicly, was obliged to declare himself and take a definite stand vis-à-vis the group. (d) The situation possessed a self-con-

tained character. The critical subject could not avoid or evade the dilemma by reference to conditions external to the experimental situation. (It may be mentioned at this point that the forces generated by the given conditions acted so quickly upon the critical subjects that instances of suspicion were rare.)

The technique employed permitted a simple quantitative measure of the "majority effect" in terms of the frequency of errors in the direction of the distorted estimates of the majority. At the same time, we were concerned from the start to obtain evidence of the ways in which the subjects perceived the group, to establish whether they became doubtful, whether they were tempted to join the majority. Most important, it was our object to establish the grounds of the subject's independence or yielding; whether, for example, the yielding subject was aware of the effect of the majority upon him, whether he abandoned his judgment deliberately or compulsively. To this end, we constructed a comprehensive set of questions which served as the basis of an individual interview immediately following the experimental period. Toward the conclusion of the interview each subject was informed fully of the purpose of the experiment, of his role, and of that of the majority. The reactions to the disclosure of the purpose of the experiment became in fact an integral part of the procedure. We may state here that the information derived from the interview became an indispensable source of evidence and insight into the psychological structure of the experimental situation, and in particular of the nature of the individual differences. Also, it was not justified or advisable to allow the subject to leave without giving him a full explanation of the experimental conditions. The experimenter has a responsibility to the subject to clarify his doubts and to state the reasons for placing him in the experimental situation. When this is done, most subjects react with interest and many express gratification at having lived through a striking situation which has some bearing on wider human issues.

Both the members of the majority and the critical subjects were male college students. We shall report the results for a total of 50 critical subjects in this experiment.

1. There was a marked movement toward the majority. One-third of all the estimates in the critical group were errors identical with or in the direction of the distorted estimates of the majority. The significance of this finding becomes clear in the light of the virtual absence of errors in control groups, the members of which recorded their estimates in writing.

2. At the same time, the effect of the majority was far from complete. The preponderance of estimates in the critical group (68%) was correct despite the pressure of the majority.

3. We found evidence of extreme individual differences. There were in the critical group subjects who remained independent without excep-

tion, and there were those who went nearly all the time with the majority. (The maximum possible number of errors was 12, while the actual range of errors was 0-11.) One-fourth of the critical subjects was completely independent; at the other extreme, one-third of the group displaced the estimates toward the majority in one-half or more of the trials.

The differences between the critical subjects in their reactions to the given conditions were equally striking. There were subjects who remained completely confident throughout. At the other extreme were those who became disorientated, doubt-ridden, and experienced a powerful impulse not to appear different from the majority.

For purposes of illustration we shall include a brief description of one independent and one yielding subject.

*Independent.* After a few trials he appeared puzzled, hesitant. He announced all disagreeing answers in the form of, "Three, sir. Two, sir." Not so with the unanimous answers. At trial 4 he answered immediately after the first member of the group, shook his head, blinked, and whispered to his neighbor, "Can't help it, that's one." His later answers came in a whispered voice, accompanied by a deprecating smile. At one point he grinned embarrassedly, and whispered explosively to his neighbor: "I always disagree—darn it!" During the questioning, this subject's constant refrain was: "I called them as I saw them, sir." He insisted that his estimates were right without, however, committing himself as to whether the others were wrong, remarking that, "That's the way I see them, and that's the way they see them." If he had to make a practical decision under similar circumstances, he declared, "I would follow my own view, though part of my reason would tell me that I might be wrong." Immediately following the experiment, the majority engaged this subject in a brief discussion. When they pressed him to say whether the entire group was wrong and he alone right, he turned upon them defiantly, exclaiming: "You're *probably* right, but you may be wrong!" To the disclosure of this experiment, this subject reacted with the statement that he felt "exultant and relieved," adding, "I do not deny that at times I had the feeling: 'To heck with it, I'll go along with the rest.'"

*Yielding.* This subject went with the majority in 11 out of 12 trials. He appeared nervous and somewhat confused, but he did not attempt to evade discussion; on the contrary, he was helpful and tried to answer to the best of his ability. He opened the discussion with the statement, "If I'd been the first I probably would have responded differently." This was his way of stating that he had adopted the majority estimates. The primary factor in his case was a loss of confidence. He perceived the majority as a decided group, acting without hesitation: "If they had been doubtful I probably would have changed, but they answered with such confidence." Certain of his errors, he explained, were due to the doubtful nature of



the comparisons; in such instances he went with the majority. When the object of the experiment was explained, the subject volunteered, "I suspected about the middle—but tried to push it out of my mind." It is of interest that his suspicion was not able to restore his confidence and diminish the power of the majority. Equally striking is his report that he assumed the experiment to involve an "illusion" to which the others, but not he, were subject. This assumption, too, did not help to free him. On the contrary, he acted as if his divergence from the majority was a sign of defect. The principal impression this subject produced was of one so caught up by immediate difficulties that he lost clear reasons for his actions, and could make no reasonable decisions.

### A First Analysis of Individual Differences

On the basis of the interview data described earlier, we undertook to differentiate and describe the major forms of reaction to the experimental situation, which we shall now briefly summarize.

Among the *independent* subjects, we distinguished the following main categories:

1. Independence based on *confidence* in one's perception and experience. The most striking characteristic of these subjects is the vigor with which they withstand the group opposition. Though they are sensitive to the group, and experience the conflict, they show a resilience in coping with it, which is expressed in their continuing reliance on their perception and the effectiveness with which they shake off the oppressive group opposition.

2. Quite different are those subjects who are independent and *with-drawn*. These do not react in a spontaneously emotional way, but rather on the basis of explicit principles concerning the necessity of being an individual.

3. A third group of independent subjects manifest considerable tension and *doubt*, but adhere to their judgments on the basis of a felt necessity to deal adequately with the task.

The following were the main categories of reaction among the *yielding* subjects, or those who went with the majority during one-half or more of the trials:

1. *Distortion of perception* under the stress of group pressure includes a very few subjects who yield completely, but are not aware that their estimates have been displaced or distorted by the majority. These subjects report that they came to perceive the majority estimates as correct.

2. Most submitting subjects experience *distortion of judgment*. The factor of greatest importance in this group is a decision the subjects reach that their perceptions are inaccurate, and that those of the majority are

correct. These subjects suffer from primary doubt and lack of confidence; on this basis they feel a strong tendency to join the majority.

3. A group of subjects experiencing *distortion of action* do not suffer a modification of perception nor do they conclude that they are wrong. They yield because of an overmastering need not to appear different from or inferior to others, because of an inability to tolerate the appearance of defectiveness in the eyes of the group. These subjects suppress their observations, and voice the majority position with awareness of what they are doing.

The results are sufficient to establish that independence and yielding are not psychologically homogeneous, that submission to group pressure (and freedom from pressure) can be the result of different psychological conditions. It should also be noted that the categories described above, being based exclusively on the subjects' reactions to the experimental conditions, are descriptive and do not presume to explain why a given individual responded in one way rather than another. The further exploration of the basis for the individual differences is a separate task upon which we are now at work.

### Experimental Variations

The results described are clearly a joint function of two broadly different sets of conditions. They are determined first by the specific external conditions, by the particular character of the relation between social evidence and one's own experience. Second, the presence of pronounced individual differences points to the important role of personal factors, of factors connected with the individual's character structure. We reasoned that there are group conditions which would produce independence in all subjects, and that there probably are group conditions which would induce intensified yielding in many, though not in all. Accordingly we followed the procedure of *experimental variation*, systematically altering the quality of social evidence by means of systematic variation of group conditions. Secondly, we deemed it reasonable to assume that behavior under the experimental social pressure is significantly related to certain basic, relatively permanent characteristics of the individual. The investigation has moved in both of these directions. Because the study of the character qualities which may be functionally connected with independence and yielding is still in progress, we shall limit the present account to a sketch of the representative experimental variations.

#### *The Effect of Nonunanimous Majorities*

Evidence obtained from the basic experiment suggested that the condition of being exposed *alone* to the opposition of a "compact majority"

may have played a decisive role in determining the course and strength of the effects observed. Accordingly we undertook to investigate in a series of successive variations the effects of *nonunanimous* majorities. The technical problem of altering the uniformity of a majority is, in terms of our procedure, relatively simple. In most instances, we merely directed one of the members of the instructed group to deviate from the majority in prescribed ways. It is obvious that we cannot hope to compare the performance of the same individual in two situations on the assumption that they will remain independent of each other. At best, we can investigate the effect of an earlier upon a later experimental condition. The comparison of different experimental situations therefore requires the use of different but comparable groups of critical subjects. This is the procedure we have followed. In the variations to be described, we have maintained the conditions of the basic experiment (e.g., the sex of the subjects, the size of the majority, the content of the task, and so on) save for the specific factor that was varied. The following were some of the variations we studied.

1. *The presence of a "true partner."* (a) In the midst of the majority were *two* naive, critical subjects. The subjects were separated spatially, being seated in the fourth and eighth positions, respectively. Each therefore heard his judgment confirmed by one other person (provided the other person remained independent), one prior to and the other subsequent to announcing his own judgment. In addition, each experienced a break in the unanimity of the majority. There were six pairs of critical subjects. (b) In further variation, the "partner" to the critical subject was a member of the group who had been instructed to respond correctly throughout. This procedure permits the exact control of the partner's responses. The partner was always seated in the fourth position; he therefore announced his estimates in each case before the critical subject.

The results clearly demonstrate that a disturbance of the unanimity of the majority markedly increased the independence of the critical subjects. The frequency of promajority errors dropped to 10.4% of the total number of estimates in variation *a*, and to 5.5% in variation *b*. These results are to be compared with the frequency of yielding to the unanimous majorities in the basic experiment, which was 32% of the total number of estimates. It is clear that the presence in the field of *one other* individual who responded correctly was sufficient to deplete the power of the majority, and in some cases to destroy it. This finding is all the more striking in the light of other variations which demonstrate the effect of even small minorities, provided they are unanimous. Indeed, we have been able to show that a majority of three is, under the given conditions, far more effective than a majority of eight containing one dissenter. That critical subjects will under these conditions free them-

selves of a majority of seven and join forces with one other person in the minority is, we believe, a result significant for theory. It points to a fundamental psychological difference between the condition of being alone and having a minimum of human support. It further demonstrates that the effects obtained are not the result of a summation of influences proceeding from each member of the group; it is necessary to conceive the results as being relatively determined.

2. *Withdrawal of a "true partner."* What will be the effect of providing the critical subject with a partner who responds correctly, and of then withdrawing the partner? The critical subject started with a partner who responded correctly. The partner was a member of the majority who had been instructed to respond correctly and to "desert" to the majority in the middle of the experiment. This procedure permits the observation of the same subject in the course of transition from one condition to another. The withdrawal of the partner produced a powerful and unexpected result. We had assumed that the critical subject, having gone through the experience of opposing the majority with a minimum of support, would maintain his independence when alone. Contrary to this expectation, we found that the experience of having had and then lost a partner restored the majority effect to its full force, the proportion of errors rising to 28.5% of all judgments, in contrast to the preceding level of 5.5%. Further experimentation is needed to establish whether the critical subjects were responding to the sheer fact of being alone, or to the fact that the partner abandoned them.

3. *Late arrival of a "true partner."* The critical subject started as a minority of one in the midst of a unanimous majority. Toward the conclusion of the experiment, one member of the majority "broke" away and began announcing correct estimates. This procedure, which reverses the order of conditions of the preceding experiment, permits the observation of the transition from being alone to being a member of a pair against a majority. It is obvious that those critical subjects who were independent when alone would continue to be so when joined by another partner. The variation is therefore of significance primarily for those subjects who yielded during the first phase of the experiment. The appearance of the late partner exerts a freeing effect, reducing the level to 8.7%. Those who had previously yielded also became markedly more independent, but not completely so, for they continued to yield more than previously independent subjects. The reports of the subjects do not cast much light on the factors responsible for the result. It is our impression that, having once committed himself to yielding, the individual finds it difficult and painful to change his direction. To do so is tantamount to a public admission that he has not acted rightly. He therefore follows the precari-



ous course he has already chosen in order to maintain an outward semblance of consistency and conviction.

4. *The presence of a "compromise partner."* The majority was consistently extremist, always matching the standard with the most unequal line. One instructed subject (who, as in the other variations, preceded the critical subject) also responded incorrectly, but his estimates were always intermediate between the truth and the majority position. The critical subject therefore faced an extremist majority whose unanimity was broken by one more moderately erring person. Under these conditions the frequency of errors was reduced, but not significantly. However, the lack of unanimity determined in a strikingly consistent way the *direction* of the errors. The preponderance of the errors, 75.7% of the total, was moderate, whereas in the parallel experiment in which the majority was unanimously extremist (i.e., with the "compromise partner" excluded), the incidence of moderate errors was reduced to 42% of the total. As might be expected, in a unanimously moderate majority, the errors of the critical subjects were without exception moderate.

### *The Role of Majority Size*

To gain further understanding of the majority effect, we varied the size of the majority in several different variations. The majorities, which were in each case unanimous, consisted of 16, 8, 4, 3, and 2 persons, respectively. In addition, we studied the limiting case in which the critical subject was opposed by one instructed subject. Table 12.1 contains the

TABLE 12.1

ERRORS OF CRITICAL SUBJECTS WITH UNANIMOUS MAJORITIES OF DIFFERENT SIZE

Size of Majority	Control	1	2	3	4	8	16
<i>N</i>	37	10	15	10	10	50	12
Mean number of errors	0.08	0.33	1.53	4.0	4.20	3.84	3.75
Range of errors	0-2	0-1	0-5	1-12	0-11	0-11	0-10

means and the range of errors under each condition.

With the opposition reduced to one, the majority effect all but disappeared. When the opposition proceeded from a group of two, it produced a measurable though small distortion, the errors being 12.8% of the total number of estimates. The effect appeared in full force with a majority of three. Larger majorities of four, eight, and sixteen did not produce effects greater than a majority of three.

The effect of a majority is often silent, revealing little of its operation to the subject, and often hiding it from the experimenter. To examine the range of effects it is capable of inducing, decisive variations of conditions are necessary. An indication of one effect is furnished by the following variation, in which the conditions of the basic experiment were simply reversed. Here the majority, consisting of a group of 16, was naive; in the midst of it we placed a single individual who responded wrongly according to instructions. Under these conditions, the members of the naive majority reacted to the lone dissenter with amusement and disdain. Contagious laughter spread through the group at the droll minority of one. Of significance is the fact that the members lack awareness that they draw their strength from the majority, and that their reactions would change radically if they faced the dissenter individually. In fact, the attitude of derision in the majority turns into seriousness and increased respect as soon as the minority is increased to three. These observations demonstrate the role of social support as a source of power and stability, in contrast to the preceding investigations which stressed the effects of withdrawal of social support, or, to be more exact, the effects of social opposition. Both aspects must be explicitly considered in a unified formulation of the effects of group conditions on the formation and change of judgments.

### *The Role of the Stimulus-Situation*

It is obviously not possible to divorce the quality and course of the group forces which act upon the individual from the specific stimulus-conditions. Of necessity, the structure of the situation molds the group forces and determines their direction as well as their strength. Indeed, this was the reason that we took pains in the investigations described above to center the issue between the individual and the group around an elementary and fundamental matter of fact. And there can be no doubt that the resulting reactions were directly a function of the contradiction between the objectively grasped relations and the majority position.

These general considerations are sufficient to establish the need of varying the stimulus-conditions and of observing their effect on the resulting group forces. We are at present conducting a series of investigations in which certain aspects of the stimulus-situation are systematically altered.

One of the dimensions we are examining is the magnitude of discrepancies above the threshold. Our technique permits an easy variation of this factor, since we can increase or decrease at will the deviation of the majority from the given objective conditions. Hitherto we have studied the

effect of a relatively moderate range of discrepancies. Within the limits of our procedure, we find that different magnitudes of discrepancy produce approximately the same amount of yielding. However, the quality of yielding alters: as the majority becomes more extreme, there occurs a significant increase in the frequency of "compromise" errors. Further experiments are planned in which the discrepancies in question will be **extremely large and small**.

We have also varied systematically the structural clarity of the task, including in separate variations judgments based on mental standards. In agreement with other investigators, we find that the majority effect grows stronger as the situation diminishes in clarity. Concurrently, however, the disturbance of the subjects and the conflict-quality of the situation decrease markedly. We consider it of significance that the majority achieves its most pronounced effect when it acts most painlessly.

### Summary

We have investigated the effects upon individuals of majority opinions when the latter were seen to be in a direction contrary to fact. By means of a simple technique we produced a radical divergence between a majority and a minority, and observed the ways in which individuals coped with the resulting difficulty. Despite the stress of the given conditions, a substantial proportion of individuals retained their independence throughout. At the same time a substantial minority yielded, modifying their judgments in accordance with the majority. Independence and yielding are a joint function of the following major factors: (a) The character of the stimulus situation. Variations in structural clarity have a decisive effect: with diminishing clarity of the stimulus-conditions, the majority effect increases. (b) The character of the group forces. Individuals are highly sensitive to the structural qualities of group opposition. In particular, we demonstrated the great importance of the factor of unanimity. Also, the majority effect is a function of the size of group opposition. (c) The character of the individual. There were wide, and indeed, striking differences among individuals within the same experimental situation. The hypothesis was proposed that these are functionally dependent on relatively enduring character differences; in particular, those pertaining to the person's social relations.

### REFERENCES

1. Asch, S. E. Studies in the principles of judgments and attitudes: II. Determination of judgments by group and by ego-standards. *Journal of Social Psychology*, 1940, 12, 433-465.
2. Asch, S. E. The doctrine of suggestion, prestige and imitation in social psychology. *Psychological Review*, 1948, 55, 250-276.

3. Asch, S. E., Bloch, H., & Hertzman, M. Studies in the principles of judgments and attitudes: I. Two basic principles of judgment. *Journal of Psychology*, 1938, 5, 219-251.
4. Coffin, E. E. Some conditions of suggestion and suggestibility: A study of certain attitudinal and situational factors influencing the process of suggestion. *Psychological Monographs: General and Applied*, 1941, 53, No. 4.
5. Lewis, Helen B. Studies in the principles of judgments and attitudes: IV. The operation of prestige suggestion. *Journal of Social Psychology*, 1941, 14, 229-256.
6. Lorge, I. Prestige, suggestion, and attitudes. *Journal of Social Psychology*, 1936, 7, 386-402.
7. Miller, N. E., & Dollard, J. *Social learning and imitation*. New Haven: Yale Univ. Press, 1941.
8. Moore, H. T. The comparative influence of majority and expert opinion. *American Journal of Psychology*, 1921, 32, 16-20.
9. Sherif, M. A study of some social factors in perception. *Archives of Psychology*, N. Y., 1935, No. 187.
10. Thorndike, E. L. *The psychology of wants, interests, and attitudes*. New York: Appleton-Century, 1935.



## Interaction between Attitude and the Definition of the Situation in the Expression of Opinion

Raymond L. Gorden

The main purpose of this study is to explore the relationships between a person's *private opinion* and his *definition of the situation* and how they affect his expression of *public opinion* in a social situation.

The pursuit of this objective is divided into two phases. The first is an experimental study in which the only aspect of the individual's definition of the situation under consideration is his *estimate of the group opinion*. This part of the study describes the extent to which each individual alters his private opinion to conform to his estimation of the group opinion when asked to express his opinion in that group. The second phase of the study uses case materials to gain insight into the reasons for the behavior of the extreme conformists and nonconformists. In this material, other aspects of each person's definition of the situation are considered in addition to his estimate of the group opinion.

In order to observe the dynamic interplay between each person's *private opinion* and his *definition of the situation* which interact to develop his expression of *public opinion*, it is necessary to study a group (*a*) in which there is a wide range of private opinions, (*b*) where the members of the group are so intimately acquainted as to have a clear definition of the situation with respect to the particular subject upon which they are asked to express themselves, and (*c*) where there is variation in the *definition of the situation* from person to person resulting from differences in each person's background, the nature of his connection with the group, and his role and status in the group.

### Description of the Group Studied

The study began by participant observation of a group of 36 members of a cooperative living project. Because of turnover in membership and individuals taking vacations during some phase of the collection of data, complete data were collected on only 24 of the members.

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About half of the members were students and the rest worked in a variety of professions, semi-professions, and vocations ranging from college instructor to waitress. All but one person had some college education. The ages ranged from 21 to 35 years. Half were males and half were females. These people lived in a large, single-family residence which had four floors and seven bathrooms.

The household tasks were shared and all the members ate the evening meal in the common dining room. According to another study by the writer, some of the more important forces bringing the people into the co-op were (a) a common interest in the cooperative movement, (b) economical housing, (c) a desire for primary association with other minority groups, (d) a desire to meet members of the opposite sex, and (e) a desire to be in an atmosphere where members of minority groups can relax and be treated as equals.

Although the group was composed of a wide variety of cultural backgrounds, there was one common denominator; namely, all the members belonged to a minority group. The group included seven Negroes, nine Jews, of whom only two attended religious services (Reformed), five members of Catholic background, of whom only two considered themselves in good standing with the church, and three pacifists. Of the three married couples living in the house, two were interracial marriages.

The political affiliation and beliefs in the group can best be characterized by the following categories: Democrats, 15; ex-Progressives, 14; Socialists, 4; Communist, 1; Republican, 1. The seven Negroes were all Democrats and were noticeably more conservative than the Caucasians. This is mainly because the Negroes were trying to achieve a higher status than their parents. The Caucasians, on the other hand, tended to be rebellious against the "bourgeois" standards of their parents.

In the opinion of the writer, this group is heterogeneous enough to offer wide variations in attitude toward Russia and, at the same time, the members are sufficiently identified with the group to be influenced by a rather clear conception of the norms of the group.

### **The Experimental Situation**

Opinion on Russia was chosen for this study because it is a subject with emotional content, a subject toward which this group holds a wide range of feelings, and a subject upon which the sanctioned range of expression of public opinion is narrowing.

The writer was a regular member of the co-op group for a period of months and was able to collect data from observation and nondirective interviewing before the experimental phase of the study was begun.

Three types of data relating to the experimental study were collected.

First, each individual recorded his *private opinion* on Russia on a Likert-type attitude scale in a situation where the respondent was assured complete anonymity. Second, in a manner described in detail later, he was asked to express his opinion on each of these items in the presence of his fellow co-op members. These responses are referred to as his *public opinion*. Third, by a method also described later, he was asked to make an estimate of the opinion of the group on each of these same items. These responses are hereafter referred to as his *estimate of group opinion*, which is the only aspect of his *definition of the situation* which is obtained in the experimental situation. Other aspects of his definition are dealt with later in the case study material. Thus we have, from each individual, three types of responses to each of 12 items dealing with Russia. An item-for-item comparison of the three responses can thus be made for each individual, since the "anonymous" questionnaires were secretly identifiable.

For the experiment the 24 members were divided into two subgroups matched according to race, occupational status, sex, and rank order of the total score on their *private opinion*. The two groups were interviewed simultaneously in different rooms. Two interviewers worked with each group. In one group both interviewers were co-op members. In the other group one was a co-op member and the other was an "outsider" representing a nationally known opinion research organization. This procedure was used in an effort to detect any effect the interviewer himself might have on the responses in the group situation. A comparison of the responses received by each interviewer, and subsequent interviews with the respondents "after the study was completed," indicated that the respondents in general felt that all the interviewers were objective, neutral, and uncritical in comparison with the others who were listening to their responses.

The experiment had been proposed to the group as a scientific study of a new public opinion polling technique. At a regular house meeting, the group voted unanimously to cooperate with the writer in this study.

The following interviewing technique was used. The group was told that the interviewers would make a statement regarding Russia, and the respondent was to say to what extent he agreed or disagreed with the statement, using the five possible replies indicated on a card which was going to be handed to him. The group was also told that the members should listen to the replies of the others so that they could be prepared to **estimate the group opinion**.

At this point in the design of the study, an important question of methodology presented itself — When and how can each individual's most valid estimate of the group opinion be obtained? A pretest with another group seemed to indicate that an individual's awareness of the discrepancy

between his private opinion and his conception of the opinions of a given group of people was not as acute at any time *before* actually making a statement on a controversial subject as it became when the physical act of speaking occurred. Some individuals reported a growing awareness *during* the utterance of their statements, which caused them to alter the wording in order to soften the impact on the group. Other individuals testified that, although they would change the wording of a statement which they had strongly endorsed before, they did not sense an acute emotional reaction until *after* the statement was finished.

Since it was impossible to interrupt the person during his statement in this experiment, it was decided that the respondent should give his estimate of the group opinion on each item, immediately *after* his statement on *each item*, by indicating on a check-chart his estimate of the group opinion. It was suggested in the directions to each respondent that this could be done most accurately by comparing the direction and degree of the feeling of the group in relation to his own feeling on that particular item and then quickly checking his first impression.

There were many indications of the effect of the group pressure on the individual other than his choice of response. After the directions were given to the group, there were definite symptoms of tension and awareness of the group pressure. It is the writer's belief that each one felt that it was a bit awkward to appear to be too interested in the opinions of the group and so made an effort to be busy, thus easing his own tension as well as that of the person being interviewed. This conviction is based on such observations as the following:

*Case 2*, a person who had the most anti-Russian score on both the anonymous response and the group response, came into the group, whispered to her husband, and left. He also left to set the table for dinner. After a while the interviewer went after him and told him it would take only a minute. He consented reluctantly because, he explained, he was busy. After his own interview, however, he had time to remain in the group until the last interview was completed.

*Case 8* sat on one end of a couch with a Penguin Book in his hand, opened to page 38. Twenty-two minutes later he was on the same page.

Five of the respondents who usually speak in normal voices replied almost inaudibly to the interviewer, whose ear was approximately three feet from the respondent. In these cases the interviewer would pretend not to have heard, and in a clear, matter-of-fact voice audible to the rest of the group ask, "You said agree? Was that strongly or moderately? Strongly? Thank you."

In two cases where the person felt that the group strongly disagreed with his statement, the interviewer and the respondent had the following exchange.



Respondent: (in an almost inaudible voice) Agree strongly.

Interviewer: Did you say agree or disagree?

Respondent: Agree.

Interviewer: Was that strongly or moderately?

Respondent: Moderately.

Interviewer: Moderately? Thank you.

It appears that each thought better of his first response and changed from strongly to moderately, which was nearer to his conception of the group norms. The general atmosphere of the group had a lack of spontaneity and a stiff sort of nonchalance.

### Analysis of Data

There are some general relationships between the three scores, which are consistent for the group. Analysis of the relationship between *private opinion* and *estimate of group opinion* indicates a marked tendency for the individual to estimate correctly the *direction* of the median opinion of the group (as indicated by the aggregate private opinion) in relation to his own private opinion.<sup>1</sup>

From Table 13.1 we see that those whose opinions were more pro-Rus-

TABLE 13.1

DISTRIBUTION OF RESPONDENTS BY THEIR PRIVATE OPINIONS ON RUSSIA AND THE DIRECTION OF THEIR ESTIMATE OF THE GROUP OPINION IN RELATION TO THEIR OWN PRIVATE OPINIONS

INDIVIDUAL'S PRIVATE OPINION	DIRECTION OF ESTIMATE OF GROUP OPINION		TOTAL
	More Pro-Russian	More Anti-Russian	
Pro-Russian	2	10	12
Anti-Russian	10	2	12
Total	12	12	24

sian on the *private opinion* scale tended correctly to estimate the group opinion as being more anti-Russian than their own.<sup>2</sup> It can be said that 20 of the 24 people were correct in their estimate in regard to the general direction of the group opinion.

There is another general relationship found between the individual's *private opinion* and his *estimate of the group opinion*. Those who are pro-Russian on the private opinion scale tend to estimate the opinion of

<sup>1</sup> Anonymous opinion is divided into pro- and anti-Russian by the median.

<sup>2</sup> Group opinion was obtained from the median score on the aggregate of private opinions.

the group as being more pro-Russian than it actually is, and *vice versa*, as shown in Table 13.2. Thus, although the estimate of the direction of

TABLE 13.2

DISTRIBUTION OF RESPONDENTS BY THEIR PRIVATE OPINIONS ON RUSSIA AND THEIR ACCURACY IN ESTIMATING MEAN OPINION OF THE GROUP

INDIVIDUAL'S PRIVATE OPINION	ACCURACY OF ESTIMATE OF GROUP OPINION		TOTAL
	Too Pro-Russian	Too Anti-Russian	
Pro-Russian	10	2	12
Anti-Russian	2	10	12
Total	12	12	24

the group mean from the individual's private opinion is correct, the conception of the absolute position of the group appears to be influenced by the individual's own feeling, as well as by the actual group opinion.

It can be similarly demonstrated that there is a positive relationship between the anonymous opinion and the opinion expressed in the group, as may be seen from Table 13.3.

TABLE 13.3

DISTRIBUTION OF RESPONDENTS BY THEIR PRIVATE OPINIONS ON RUSSIA AND THEIR PUBLIC OPINIONS ON RUSSIA

PRIVATE OPINION	PUBLIC OPINION		TOTAL
	Pro-Russian	Anti-Russian	
Pro-Russian	11	1	12
Anti-Russian	1	11	12
Total	12	12	24

Tables 13.1, 13.2 and 13.3 show that in general each person can correctly estimate whether the group is either more or less pro-Russian than himself, but he usually does not realize that the amount of this difference is as great as it is. Also, in general, there are no individuals who shift from the "pro" category on their *private* opinion to the "anti" category on their *public* opinion or *vice versa*.

This rather crude analysis does not, however, demonstrate the shifts of lesser magnitude. In order to reveal these smaller changes we must compare each person's total score for the three types of responses. Since there

are 12 items with five-point responses, the possible range of the total scores is from 12 to 60, with 60 representing the extreme pro-Russian score.

In 13 cases the expression of *public opinion*, as indicated by *total scores* in the group situation, more closely approximated the person's conception of the group norms than did his *private opinion*. In eight cases the expression in the group is further from their conception of group norms than is their expression in the anonymous situation. In three cases there was no change in the total score from the anonymous to the group situation.

This might suggest that in general the person's expression of opinion regarding Russia is influenced by his conception of how others regard Russia. This appears to be a plausible enough result, but the eight cases whose attitudes were counter to their conceptions of the group, and the three who indicated no influence by the group, must be studied in comparison with the 13 cases who conformed to the group.

It is necessary at this time to point out that the comparison of these three total scores for each person is used only for a rough group comparison, and that there are certain meaningful differences that are hidden in the total scores. For example, we shall compare the actual responses on

TABLE 13.4

A COMPARISON OF THE RESPONSES OF TWO INDIVIDUALS ON EACH ITEM IN THE THREE SCORES

ITEM NUMBER	CASE #2			CASE #23		
	I Private Opinion	II Estimate of Group	III Public Opinion	I Private Opinion	II Estimate of Group	III Public Opinion
1	1	2	2	1	2	2
2	2	1	1	3	1	1
3	4	4	4	3	3	3
4	2	4	2	2	2	2
5	2	1	1	2	4	4
6	4	1	5	3	4	4
7	2	5	5	1	2	2
8	1	5	1	2	2	2
9	3	2	2	4	4	4
10	4	2	4	4	4	4
11	2	4	4	4	4	4
12	5	5	5	4	5	5
Total	32	36	36	33	37	37

the separate items by Case 2 with those by Case 23, which in terms of total scores appear very similar. Thus in Table 13.4 we see that, although in both cases the *total score* was practically the same in columns II and

*III*, there are a number of disagreements in the individual items (see items 4, 6, 8, and 10) in Case 2, and no discrepancy in Case 23.

In Case 2 the person resisted his conception of the group norms to the extent of six points in the pro-Russian direction (items 4 and 8), and also resisted to the extent of six points in the anti-Russian direction (items 6 and 10), making the total score the same. On the other hand, Case 23 on each item conformed to her conceptions of the group norms even though it meant becoming more pro-Russian on items 1, 5, 6, 7, and 12, and more anti-Russian on item 2. Thus we see the inadequacy of total scores for describing the individual variation in relationship to his conception of the group norm.

These two cases are discussed because they afford the most clear contrast with respect to the degree to which individual variations are concealed by total scores. In no other case was the inconsistency as great as in Case 2.

In order to avoid such deception and in order to sharpen our analysis, we shall use the following four terms to describe the possible relationships between the three types of responses:

*Agreement* will indicate the extent to which the person's private opinion coincides with his estimate of the group opinion.

*Conformity* will indicate the degree to which the person alters his private opinion to conform more closely to his conception of the group norms when speaking in the group.

*Resistance* will indicate the extent to which a person retains his original private opinion despite his conception of the group as being different.

*Reaction* will be used to describe the situation where a person in effect reverses the direction of his private opinion in order to be different from the group.

The frequency of each of these modes of adjustment for each individual is shown in Table 13.5. A comparison of column *A* with any of the other columns is not valid, because the figures in column *A* represent the number of items out of the 12 where the individual's responses indicated no differences between his private opinion and his conception of the group opinion. However, a comparison of columns *B*, *C*, and *D* is meaningful, since the figures in each of these columns represent the total number of degrees of a given type of response for the 12 items. Therefore, inspection of Table 13.5 allows us to compare individuals with respect to the proportion of conformity, resistance, or reaction. However, the total of columns *B*, *C*, and *D* for any one case is limited by the number of items, indicated in column *A*, where there was agreement between the person's private opinion and his estimate of the group opinion. Only when the individual's private opinion differs from his estimate of the group opinion can we record the effect of his conception of the group opinion on his expres-



TABLE 13.5

THE DEGREE OF AGREEMENT, CONFORMITY, RESISTANCE, AND REACTION BY INDIVIDUAL CASES

Case No.	A Agreement *	B Conformity †	C Resistance †	D Reaction †
1	2	4	6	0
2	2	9	8	1
3	1	0	8	9
4	1	11	1	3
5	3	5	2	4
6	5	2	6	2
7	7	4	2	2
8	8	5	2	0
9	3	7	1	2
10	0	6	7	2
11	2	9	4	1
12	0	7	3	6
13	0	5	5	2
14	1	10	8	6
15	3	5	1	3
16	2	5	1	4
17	3	3	5	2
18	4	2	6	8
19	5	13	0	0
20	6	7	0	0
21	3	8	2	1
22	2	5	3	3
23	6	8	0	0
24	1	3	2	6
Total	70	143	83	67

\* These figures indicate the number of items out of the 12 where the person's private opinion agreed with his conception of the group norms.

† These figures represent the number of degrees of discrepancy on the five-point response.

sion of public opinion. The totals of columns *B*, *C*, and *D* indicate that, for the group as a whole, conformity was the predominant mode of adjustment to the discrepancy between the person's private opinion and his estimate of the group opinion.

Since the reliability of these responses is unknown, no attempt is made to explain why each individual had a particular proportion of conformity, resistance, or reaction. Instead, it would seem more prudent to select only the extreme conformists and the extreme nonconformists and explore the case study materials in an attempt to explain these contrasting patterns of adjustment.

The degree of conformity was determined by the formula  $B - (C + D)$ , where the letters refer to the columns in Table 13.5. The conformists

chosen were those with the two highest scores on this formula, and the nonconformists were the two lowest. Applying the formula to the cases in Table 13.5, we find Cases 19 and 23 to be the conformists and Cases 3 and 18 to be the nonconformists.

### Case Study Materials

The writer does not claim that the evidence presented by the case study materials is conclusive, nor does he claim that it was collected in such a manner that the collection of this portion of the data could be precisely repeated and verified. However, the writer feels that after having an intimate acquaintance with the personalities, through living in close contact with them for more than a year and systematically gathering case materials for over three months, some significant insights have been gained.

*Case 3 (nonconformist).* Mr. W is a 25-year-old part-time student who is working on a full-time job. He is highly intelligent. He is not closely identified with the cooperative living group, but belongs to a small gang of high school buddies with whom he plays cards and drinks. He mentioned that he craved recognition, which he found hard to get in the co-op group, but liked living there because he "hated to live alone, and besides I need someone around to kick me out of bed in the morning or to call the boss and tell him I'm sick and can't work."

The writer has observed Mr. W taking opposite sides on the same issue from time to time, and he admits "getting a kick" out of showing his knowledge and shocking people with his views. He also feels there is no great penalty for having contrary views: "No one gives a damn what you say or do as long as you get your work job done. Everyone here is liberal, or at least thinks he is."

In this case we find three important factors which seem to account for Mr. W's nonconformity. First, he is more closely identified with his high school gang and does not depend heavily upon the co-op group for intimate response. Second, he admits craving recognition, "but I don't get it here at the co-op; I'm just a plain old Joe here, and a prize dope." Perhaps his apparent negativistic shifting of sides, to show off his knowledge and shock people, is an attempt to obtain this recognition. Third, he conceives the group sanctions to be mild and tolerant.

*Case 18 (nonconformist).* Miss X is a professional worker, 25 years of age, who has lived at the co-op house for about a year. She was born in Austria and spent a few years in England. According to her own testimony, most of her social contacts are in this group. "I came hoping that the informal atmosphere would help me get rid of some of my inhibitions and peculiar reactions to the opposite sex. I don't belong to any cliques outside of the co-op. I have always lived in some peculiar circumstances where I have never really become sociable."

She feels that the group is tolerant of deviations. She points out that although there is a wide range of opinions on vital matters, "they all get along pretty well because both sides are tolerant and want to live and let live."

Miss X is a socialist who in general seems to have a more moderate view of Russia than many. A statement which seems to represent her position is, "Even the U.S.A. is not very democratic, and Russia is less so. I think the Labor Party in England will do a better job of balancing both economic and political power."

Miss X, according to the observations of the writer, her friends, and her own testimony, has deep-seated negativistic reaction patterns: "If they (men) think I am a 'loose girl' I like to prove that I'm not; and if they think I am too prudish, I like to pretend that I really don't have any inhibitions but am just being coy. I'm not just trying to attract them, because as soon as they get interested then I change. Yet I don't want them to leave. I don't know why that is."

We see that both Mr. W and Miss X have personality traits which might increase the possibility of a negativistic reaction in the group. Both of them define the group as being tolerant. Both have superior intelligence and college degrees and no inferior feeling regarding personal appearance. Here the similarity ends. He is well integrated into an outside clique while she has her most intimate associations in the co-op group. However, her reaction to others is in many cases of a non-adjustive nature, and she is not well integrated into any social group. Perhaps her identification with the group is not great despite the fact that she does not have a greater degree of identification elsewhere.

*Case 19 (conformist).* Mr. Y is 20 years old and has not completed his high school education, which he is attempting to do on the G.I. Bill. He has been at the co-op house only two months. He is of Jewish background and is minority conscious. He is from a lower socio-economic class and has aspirations for upward mobility via education. He has a strong identification with the co-op group. He says, "It is the first place that I have found since I came back from the army that made me feel at home. I don't have to worry about discrimination here and nobody is going to push me around. That's one reason why I want to get an education. . . . That's one reason I came to the co-op. There are lots of students here, and they are all smarter than I am. It is a good chance to learn a lot. . . . I don't know anything about Russia as it is today, even if my mother does tell me how things were when she was there forty years ago . . . and it sounds like a place where people get pushed around, but I don't know anything about it, so why should I show my ignorance?"

Mr. Y's dependence on the group is obvious. He likes the group and feels it is a privilege to mingle with those who are "smarter" than he is. He willingly and consciously conforms to a group who would "never push me around."

*Case 23 (conformist).* Miss Z is also a relatively new member in the house. She is 21 years old, attractive, Negro, and striving for upward social mobility by way of the teaching profession. She has finished college, dresses well, has "good manners," and considers tact and diplomacy a very desirable trait in herself. She is gregarious and finds the co-op a "haven of refuge" while waiting for a full-time teaching job. She expresses her attitude toward the group in the following manner:

"I was told before I came into the co-op that it didn't make any difference whether you were white, black, or something in between, and I've found that to be true. I have been so fed up on prejudice—even the Negroes are prejudiced against other Negroes and whites."

In an informal interview after the experimental situation, she explained that she wasn't sure whether her statements in the group were the group's opinions or her own. "I was left with no alternative but to assume or interpret what is meant by each statement without asking the interviewer, so I tried to interpret the meaning of each statement according to what I thought it meant to most of the other people in the house. . . . I know that there are some people in the house who are in political science and international relations who know a lot more about Russia than I do. I should know a lot more but I don't."

In both cases (19 and 23) there is a strong identification with the group in the sense that it fulfills certain needs for the individual. Also, both people feel that their opinion on the matter is inferior to the others'. In Mr. Y's case it seems that his conformity is more intentional, while in the case of Miss Z it takes the form of changed interpretation of the meaning of the questions in view of the probable meaning to others in the group. It is impossible to say why Mr. Y conformed more than Miss Z, but one factor is that Miss Z did not conceive of the group norms as being so far from her anonymous opinion as did Mr. Y. This fact places a limit upon the degree of conformity possible in her case.

In comparing the two most extreme conformists with the two most non-conformist members of this group, we find certain rather clear differences. First, the conformists had a number of factors which contributed to their need for security and acceptance into the group. Second, certain combinations of factors made them feel that their opinion was less important than their being accepted. And third, there was the implication that they could not deviate strongly from the group without jeopardizing their present or future status.

On the other hand, the nonconformists not only had certain personality factors which might predispose them toward a negative reaction to the group norms, but also it appears that they did not have so much to lose nor did they seem to feel that they would lose anything by nonconformity in this particular group. The writer, after living with the group for three years, feels that as people remain in the group longer, they become aware of a wider range of values and find that there is even more tolerance of ideas than they suspected. Among the older members there is not only tolerance of different ideas, whether conservative or radical, but a certain prestige value in being different if the difference is sincere.<sup>3</sup>

<sup>3</sup> The writer is acutely aware that no generalizations can be made from a rather impressionistic analysis of four extreme cases. It is also clear that the rough generalizations abstracted from these four cases are obscured or do not apply in other conforming or nonconforming cases.



### Summary and Conclusions

1. *Awareness of group pressure.* Both the symbolic responses of the members of the group and the more subtle nonsymbolic interaction in the group clearly indicate an acute awareness of the presence of the other members of the group when they are asked to express their opinion. Confused efforts to appear nonchalant, efforts to escape the situation, and attempts to prevent others from hearing one's response are all telltale signs of the awareness of pressure.

2. *Accuracy of estimate of group opinion.* Although there was a considerable range in the accuracy of individuals' estimates of the group opinion, certain general relationships were found. (a) As indicated in Table 13.1, nearly everyone in the group correctly estimated the *direction* of the group opinion in relation to his own private opinion. (b) But, as indicated in Table 13.2, there was a strong tendency to underestimate the degree of this discrepancy. In 20 out of 24 cases those who were above the median score for the group estimated the group opinion to be higher than it was or *vice versa*.

Here it is important to note that there was no significant or consistent difference in the accuracy of individual estimates of group opinion which could be related to the order in which the person was interviewed. This was true despite the fact that those who were interviewed last had heard many more responses from the members of the group upon which they could base an objective estimate. There are some possible explanations which would merit further investigation: (a) They may not have accepted the expressions of public opinion in the group as representing the real attitudes of the individual, or (b) the total effect may have been too confusing and therefore the respondent used some modification of his preconceived image of the group in estimating the group opinion. (c) Each respondent may have been interested only in the reactions of certain individuals in the group.

Although from one point of view it is important to understand the various factors influencing the accuracy of the estimate of the group opinion, the significant factor which influences the person's behavior in the group is his subjective feeling and imagery with regard to the group norms, regardless of how accurately this feeling and imagery may reflect the "objective" situation.

3. *The effect of the definition of the situation.* We have already commented briefly upon the effect on the qualitative nonsymbolic interaction in the group, and will restrict the comments at this point to the effect upon the quantitative symbolic responses.

In general, the individuals tended to conform to their conception of the group norms when giving their public opinion. The typical pattern

is for the individual to compromise between his private opinion and his conception of the group opinion when expressing his public opinion.

In addition to merely comparing the total scores, a more searching analysis of the data was made by making an item-by-item comparison of the three types of responses for each individual. This type of analysis indicated three types of adjustment to differences between the person's private opinion and his conception of the group norms. About 49% of these adjustments followed the conformity pattern, 28% followed the resistance pattern, and 22% followed the reaction pattern. Most of the individuals did not fall clearly into one of these adjustment patterns, but there was a wide variation in the proportion of each type of adjustment by each individual. However, there were three cases (see Cases 19, 20, and 23 in Table 13.5) who were pure conformists and one case (3) who showed no conformity in his adjustment pattern.

4. *Causes of the variation in adjustment patterns.* Since the reliability of the responses had not been established, only the two extreme conformists and the two extreme nonconformists were selected in an attempt to explain these apparently opposite types of adjustment. The following factors were felt by the writer to be significant in explaining the varying degrees of conformity and may serve as hypotheses for a more precise and controlled study: (a) the degree of the person's identification with the group, (b) his conception of the group's attitude toward nonconformity, (c) his conception of his own role in relation to the group, and (d) special personality traits such as negativism.

## Group Structure and Perception

Everett W. Bovard, Jr.

In his study of social factors in perception, Sherif (10) showed that verbally expressed judgments of individuals as to extent of auto-kinetic movement, initially widely divergent, converged on a common norm in a social situation. The same convergence after group discussion for estimates of the number of beans in a jar had been previously demonstrated by Jenness (6).

In Sherif's experiment, however, it was further established that when persons who had participated in the group situation were tested alone, their perception of the extent to which the light moved followed the previously established group norm. That social modification of perception would also hold for more highly structured perceptual fields was demonstrated by Schonbar (9), who had pairs of individuals estimate discriminably different extents of movements of a point of light. In the final alone situation, each tended to see the light move a distance commensurate with the norm established in the paired situation.

Three possible factors in the determination of the extent to which the individual's perception will be modified in a group situation are (a) the structure of the perceptual field, (b) the personality of the person, and (c) the structure of the group.

Sherif argued (12) that the degree to which the perceptual field is structured serves to limit the influence of social factors in perception. This hypothesis is supported by the experiments of Luchins (7) and others. In her study, however, Schonbar (9) obtained just as much convergence on a common norm in perceptual fields of high structure as in perceptual fields of medium structure. Her work certainly proved, in any case, that the principle of social modification of perception could be extended from ambiguous perceptual stimuli to concrete, objective stimuli.

A study by the writer (2) indicated that in the same experimental situation, people show striking differences in their susceptibility to social

norms for the perception of autokinetic movement. It was suggested that these differences are related to personality characteristics of the individuals concerned.

The work of Slavson with group therapy (13, 14) and the findings of Grinker and Spiegel (5) in regard to the influence of the "military super-ego" on combat personnel, suggest that the degree to which social norms are interiorized in a group situation, and therefore the extent to which they can modify the individual's perception, depends upon the individual's relationship to the group—which is in turn a function of group structure.

Two kinds of groups can be postulated to represent the extremes of such relationship. In the therapy group of Slavson, the individual through interaction and cooperative effort could scarcely avoid being drawn into relationships with others. In a group like the traditional academic class, the individual's social contacts with others in the group would be severely limited, and he would be relatively isolated. He would have little opportunity for interaction.

### The Problem

The present study was launched on the supposition that the degree of conformity to a social norm obtained within a group is a function not only of the personalities of group members and of the structure of the perceptual field, but also of the way in which relationships within the group are structured. The recitation sections from two one semester psychology courses offered in the winter semester, 1947-1948, at the University of Michigan embodied, respectively, two contrasting group structures which would, it was felt, provide an experimental test of this supposition.

In the course in interpersonal relations, specific techniques such as the gradual retirement of the teacher from discussions, seating of students in a circle, and use of small sections (those selected for the experiment averaged 20 persons) had the effect of maximizing verbal interaction among group members. During the course of the semester, the role of the section leader became, according to plan, more and more that of a member of the group, and group decisions on various matters pertaining to the group and the course were encouraged. These procedures were standardized through daily luncheon sessions of the staff presenting the course.

A more traditional academic pattern was followed in the course in elementary psychology, where students sat in rows, classes were comparatively large (those used in the experiment averaged 30 persons), and where, while the leader participated in an encouraged discussion, the verbal interaction (in part owing to the physical arrangements) was channeled largely between teacher and student, rather than among students as in the recitation sections of the other course.

The role of the leader was here separate and distinct from that of the role of group member, and while the leader deferred to the expressed opinions of individuals in the group on various matters, no specific group decisions were undertaken as a rule. Procedures were more or less standardized through weekly



members of the teaching staff for this course, and where there was not a great deal of variation in them, the two kinds of group structure were more a matter of circumstance and tradition than deliberate design on the part of the staff.

A prospective leader-member relationship obtained with minor variations in the two kinds of courses. The teacher in sections of both met for a total of two hours each week, and each course lasted for one semester.

The essential differences between the two kinds of group structure were in the amount of verbal interaction among group members. In the leader-centered or the occasional use of group decision, the on-day-to-day procedural difference between them was undoubtedly the amount of verbal interaction among members. In the interpersonal relations course sections, such interaction was fostered by referral of teacher-directed questions back to the class whenever possible, encouragement of cross talk and debate among students and the seating arrangement. In the sections of the elementary course, following the usual academic pattern, the verbal interaction was largely concentrated between teacher and student rather than between students. Results from a recent study (3) indicate that the most procedural difference between the two kinds of groups is the verbal interaction among members.

Hereafter for the present study, the interpersonal relations course sections will be referred to as *group-centered*, while the elementary course sections will be referred to as *leader-centered*.

The specific hypothesis to be tested is, therefore, that more convergence on a common norm for perception of an objective stimulus will be obtained, following presentation of individual judgments and their average for the stimulus, in group-centered structure than in leader-centered structure.

## Method

### Apparatus

The stimulus to be used had to be one that as far as possible eliminated the factors of past experience and familiarity, yet it also had to be one that was part of a concrete, objective situation. The stimulus chosen after initial experimentation was simply a green rectangle of paper pasted on a larger rectangle of greyish-white cardboard. The length of the green rectangle was the stimulus to be judged.

### Administrative Procedure

As in the Sherif (10) experiment, it was essential in this study to make certain that Ss remained naive as to the real purpose of the experiment. On being introduced by the group leader, therefore, the experimenter requested cooperation of the group in a brief experiment in perception. He asked group members to estimate as accurately as possible the length of a green rectangle to be shown them. Judgments were to be made in inches and written on small slips of paper with no names or identifying marks attached. The Ss were told they would have to estimate length of the green rectangle again in four minutes, to determine what effect the passage of time would have on the accuracy of their perception. The experimenter then exposed the rectangle in a convenient position for 30 seconds.

The slips of paper containing the first estimates were collected, and so that the

group could hear each judgment, they were read out loud to the experimenter by an S selected at random. The experimenter then calculated the mean of the judgments and announced it clearly to the group, but in a casual manner that indicated this part of the study was a by-product.

After glancing at his watch, he then announced, regardless of the precise amount of time elapsed, that the four minutes were "just about up" and the green rectangle was exposed in exactly the same position as before for another 30 seconds, the experimenter remarking, "Judge as accurately as possible, please."

The difference in standard deviation between the two sets of judgments was then obtained, providing a measure of how much convergence had followed presentation of the group average.

### *Selection of Subjects*

Since a previous study by the writer (2) suggested that individuals vary greatly in their susceptibility to social norms for perception, it became a matter of some importance in the present experiment to discover whether any selective factors had been at work that might have tended to concentrate the more susceptible Ss in one course rather than in the other. For example, there was a greater proportion of girls in the interpersonal relations course than in the elementary course. If, however, no such selective factors were at work in regard to susceptibility to social norms, then, it was hypothesized, there should be no difference in amount of convergence on a common norm between sample sections from both courses on the *first day of a semester*.

This hypothesis of no difference was put to the test on the first day of the second semester of the 1947-1948 academic year, using 129 elementary psychology students in four sections and 137 interpersonal relations students in six sections. Choice of section was arbitrary and was dictated both by convenience in scheduling and by an effort to keep the size of the sample from each course approximately equal. The total samples used of the elementary course and the interpersonal relations course amounted to approximately 10% and 17% of the total course population, respectively.

An examination of Table 14.1 shows that the convergence of both types of group structure towards a common norm is statistically significant. The question

TABLE 14.1

CHANGE IN STANDARD DEVIATION OF ESTIMATE OF RECTANGLE LENGTH BEFORE AND AFTER PRESENTATION OF GROUP NORM, BEGINNING OF SEMESTER

Type of Group	N	SD(1)	SD(2)	Diff.	SE <sub>diff.</sub>	CR	P
Leader-centered	129	1.41	1.02	0.39	0.104	3.64	<.01
Group-centered	137	1.18	0.88	0.29	0.089	3.25	<.01

is, however, whether the *difference* in amounts of convergence between groups of students selected from the two courses is statistically significant. Inspection shows that the initial SD-SD(1) of the leader-centered sections diminished by 0.39 inches, and the initial SD of the group-centered units by 0.29, following presentation of the estimates and their average in each group. Is this difference in amount of convergence, 0.10 inches, statistically significant or not?

Recourse was had to a formula recently developed by McNemar to obtain the standard error of this difference.<sup>1</sup> The standard error obtained was 0.14. The resultant critical ratio, 0.71, was not such as to indicate that any significant difference did exist between the amounts of convergence, and the hypothesis of no difference was not disproven.

The findings suggest, but do not conclusively demonstrate, that no selective factors were operating that might have introduced a bias into the experimental results by channeling the more susceptible students into one course or the other.

The ground has now been cleared for a consideration of the major hypothesis of the present study, namely, that greater convergence on a common norm for the perception of an objective stimulus will be obtained in group-centered structure than in leader-centered structure.

Groups chosen for the test of this hypothesis were from both courses in the last weeks of the first semester in the 1947-1948 academic year. The Ss were a total of 119 students in four sections from the elementary course, and a total of 119 students in six sections from the course in interpersonal relations. The criteria for choice of groups were, again, convenience in scheduling and an effort to keep the numerical size of the sample from each course about equal. The total sample from the elementary course represented roughly 10% of the course population, while the sample from the interpersonal relations course represented approximately 14% of the course population.

## Results

### Convergence

It will be noted from Table 14.2 that the convergence for persons in leader-centered sections was 0.188 inches, while convergence for those in group-centered sections was 0.637 inches. The difference in amount of convergence is 0.449. The standard error of this difference is 0.148, yielding a critical ratio of 3.03 and a *P* of less than .01.

The obtained difference is therefore statistically significant, and is in the predicted direction. The hypothesis that presentation of individual estimates and their average for perception of an objective stimulus will modify the individual's perception of that stimulus in the direction of a

<sup>1</sup> The formula for the standard error of the difference between standard deviation differences,

$$\sigma_{(\sigma_1 - \sigma_2) - (\sigma_3 - \sigma_4)} = \sqrt{\sigma_{\sigma_1 - \sigma_2}^2 + \sigma_{\sigma_3 - \sigma_4}^2}$$

is based on McNemar's general formula for the standard error of the difference between two changes (8, pp. 78-79). It should be noted here that since the estimates for rectangle length were completely anonymous, the identities of persons making them could not be ascertained, and hence the actual differences between the first and second judgments of individuals could not be used to compute  $\sigma_{\sigma_1 - \sigma_2}$  and  $\sigma_{\sigma_3 - \sigma_4}$  in the above formula. For this reason, the correlation between the first and second judgments could not be taken into account, thus making the two standard errors of difference between first and second standard deviations obtained too large. This has the following presumptive effects: (a) the conclusion of *no difference* in convergence between samples of both populations at the beginning of a semester, as presented above, becomes less certain, while (b) the conclusion of a *significant difference* in convergence between samples of both populations at the end of another semester, presented below, becomes more certain.

common norm to a greater extent in group-centered units than in leader-centered units, has therefore been demonstrated to be tenable.

TABLE 14.2

CHANGE IN STANDARD DEVIATION OF ESTIMATES OF RECTANGLE LENGTH BEFORE AND AFTER PRESENTATION OF GROUP NORM, END OF SEMESTER

Type of Group	N	SD(1)	SD(2)	Diff.	SE <sub>diff.</sub>	CR	P
Leader-centered	119	1.07	0.882	0.188	0.09	2.1	<.05
Group-centered	119	1.58	0.943	0.637	0.118	5.39	<.01

### Divergence

Further examination of Table 14.2 will indicate an unexpected result of this experiment. The initial dispersion of rectangle length estimates, before presentation of the individual judgments and their average, was greater in the group-centered sections than in the leader-centered. Table 14.3 shows that this difference, obtained at the end of the semester after each unit had met for a total of approximately 30 hours, is statistically significant.

TABLE 14.3

COMPARISON OF INITIAL DISPERSIONS OF PERCEPTUAL ESTIMATES

	SD(1):G-C	SD(1):L-C	D <sub>per-ic</sub>	SE <sub>diff.</sub>	CR	P
End of semester	1.58	1.07	0.51	0.123	4.2	<.01
Beginning of semester	1.18	1.41	0.23	0.112	2.05	<.05

What this means is that before they know what the group average or the judgments of others are, individuals in group-centered units are freer to make extreme estimates of rectangle length than are individuals in leader-centered groups. Once the judgments of others and the group average are presented, however, group-centered unit members make a greater change from their original estimates in the direction of a common norm than do leader-centered unit members.

This leads to the paradoxical conclusion that while group-centered units have power to induce greater conformity to a perceptual norm *once that norm is made known* than do leader-centered, at the same time group-centered units permit what might be termed greater freedom from conformity *before the group norm is made known* than do leader-centered.

These conclusions are, however, based on samples from both populations at the end of a semester. A contrary result is obtained when samples from both populations on the first day of (another) semester are compared, as is shown in Table 14.3. Precisely the opposite trend in diver-



gence of initial estimates is apparent: there is significantly greater dispersion in the estimates from the population that was to undergo leader-centered procedure.

This would suggest that, going into the experiment, the elementary psychology students that were to make up the leader-centered population began with greater freedom to make extreme estimates of rectangle length than did the interpersonal relations students who were to make up the group-centered population.

The apparent result of 30 hours of leader-centered, traditional academic procedure in the elementary course was, then, to *decrease* the originally high dispersion of estimates from this population. On the other hand, the apparent result of group-centered process was to *increase* the originally low dispersion of estimates from this population, until at the end of the semester, samples from both courses showed a significantly higher dispersion for the group-centered population. This argument must remain tentative, however, since it is based on samples of both populations from the end of one semester and from the beginning of another. The underlying assumption is that there was no essential difference between the population of students who took the one-semester elementary psychology course in the winter semester, 1947-1948, and the population of students who took it in the spring semester, 1948, and that, similarly, there was no essential difference between the populations of the interpersonal relations course for these two semesters.

Even if the above assumption can be accepted, it is still necessary to account for the lower initial dispersion of perceptual judgments found on the first day of the semester in the population that was to undergo group-centered process, students in the interpersonal relations course. It should be noted that these students were required to have previously taken the elementary psychology course (leader-centered). They had therefore necessarily experienced *more* leader-centered process (which was, after all, the typical academic technique) than those just beginning the elementary course, since they were at least one semester further along in college. And it can be suggested that this greater experience with the traditional leader-centered method is reflected in a correspondingly smaller initial dispersion of perceptual estimates.

A theoretical explanation of the contrasting effects of group- and leader-centered technique on dispersion of perceptual estimates is given below in the discussion section.

### *Relation between Convergence and Divergence*

Since both greater initial dispersion and greater convergence are manifested in group-centered structure, the question naturally arises as to

what relationship obtains between these two variables. First, it can be suggested that the greater convergence is in part a function of the greater initial divergence in group-centered units. A rank-order correlation between the size of the initial standard deviation and amount of convergence obtained on presentation of the group norm for 21 groups of both kinds yields a coefficient of .70. But if the initial dispersions of the group- and leader-centered sections tested to obtain the data for Table 14.2 are mathematically equated by expressing the absolute change in standard deviation for each section as a proportion of the initial standard deviation for that section, greater relative convergence is still obtained for group-centered sections. The weighted average percentage of change with respect to the initial standard deviation was 19 for the four leader-centered units tested, and 34 for the six group-centered units.

Thus, whatever factors can be found to account for the greater initial dispersion in group-centered units will not serve to explain completely the greater convergence in this type of group.

### Discussion

It has been suggested previously that one of the major operational differences between group- and leader-centered structure is the amount of member-to-member verbal interaction in each, with such conversation being specifically encouraged in group-centered units and gently discouraged in leader-centered ones.

In a replication of the present study, involving 82 persons in two pairs of groups, with one matched group-centered unit and leader-centered unit in each pair, it was found that the major procedural difference between group- and leader-centered structure was such verbal interaction. A questionnaire showed that members of group- and leader-centered units perceived no essential difference in the role of their respective leaders; and as far as could be ascertained, the frequency of group decision was not a highly relevant variable. Observations of three-week samples of all four groups by a total of 42 observers recording one session each showed, however, a substantial difference between the two types of structure in the amount of verbal interaction among students.<sup>2</sup> These findings are summarized in Table 14.4.

<sup>2</sup> Incidentally, the replication confirmed the finding of the present study, making use of leader B's two groups, see Table 14.4, that both greater convergence and greater initial dispersion in estimates of the green rectangles' length would be obtained in a group-centered unit compared to a leader-centered unit, where the persons were naive. The differences were acceptable at the 5% level of confidence for convergence and at the 1% level for dispersion. The individuals in leader A's two groups were sophisticated in regard to the background of the green rectangle experiment and no differences of any statistical significance were found in regard to either convergence or dispersion between these two units.

How can this difference in verbal interaction, as the independent variable, be related to the obtained effects in perception of rectangle length?

It will be convenient to take up first the matter of the wider initial divergence unexpectedly found to be characteristic of group-centered structure. An explanation comes to hand if the initial assumption is made, subject to experimental check, that individuals in the group-centered unit tend to make the same sort of extreme judgments of a perceptual stimulus that they might if they were alone. Individuals in the leader-centered unit, on the other hand, being more isolated from their fellows within the unit, are more subject to what can be termed the pressure for social conformity—as F. H. Allport put it, the “attitude of submission which we assume, often unconsciously, in the presence of a group” (1, 277).

TABLE 14.4

STUDENT-TO-STUDENT REMARKS EXPRESSED AS A PERCENTAGE OF TOTAL STUDENT REMARKS

Leader	Group-Centered		Leader-Centered		<i>SE<sub>diff.</sub></i>	<i>CR</i>	<i>P</i>
	<i>N</i>	%	<i>N</i>	%			
A	533	61	93	10	0.019	26.8	<.01
B	266	34	7	2	0.018	17.8	<.01

Allport used this to account for his finding, otherwise difficult to understand, that in estimating weights and the pleasantness of odors individuals tended to make more extreme judgments in the alone compared to social situations. There was no communication between persons in the latter.

Now it can be seen that the kind of group Allport used for his social situation greatly resembles the leader-centered units of the present experiment, in that verbal interaction among members was severely curtailed. Therefore it seems reasonable to argue that the same sort of social conformity pressure that operated in Allport's experiment to dampen the extremes of judgments of weights and odors, in a social situation, operated in the leader centered groups of the present experiment to dampen the initial estimates of rectangle length.

This pressure can be defined as the individual's interiorized anticipation of disapproval from the group for some specific action on his part, and such anxiety could conceivably act to restrict the general movements of the body—for example, gestures might tend to be abortive rather than broad and sweeping in this type of group. Such anxiety could also conceivably restrict the extremes of judgment for a perceptual stimulus, although the mechanism by which this could be accomplished is not

obvious. But if this hypothesis can be accepted, a complete explanation of the results obtained requires the further hypothesis that the leader-centered member will experience more anxiety of this type than the group-centered member. Why should he?

It can be suggested that the individual in this kind of group, because of his lack of verbal interaction with the others in the group, is simply not aware of that area of behavior in which the group will demand or expect conformity from him. In the group-centered unit, the individual has a much clearer concept of what might be termed the group's *conformity zone*. It is clear to a much greater extent in this type of unit what sort of behavior will or will not be approved. The boundaries of the conformity zone are much more plainly marked.

Knowing what he can and cannot get away with, then, the man in the group-centered unit is freer to make wild guesses or extreme estimates on even an objective stimulus like the green rectangle. The social conformity pressure in this kind of group is strictly confined to the zone of conformity and does not pertain to behavior outside this range. But the man in the leader-centered group does not know where the limits of the conformity zone are, or what is expected of him. The pressure for social conformity therefore operates over a much wider range of behavior in this type of group, and is not, so to speak, reality-based. The individual manifests this restraint in restriction of movement and judgment.

Hypotheses have been presented to account for the greater initial dispersion of estimates of rectangle length obtained in the group-centered unit, and to the extent that they account for this phenomenon they also can be held partly accountable for the related phenomenon of greater convergence. But not entirely, since the rank-order correlation of .70 obtained between divergence and convergence only disposes of about half the variance in the latter variable.

It is necessary to account for the finding that when the factor of initial dispersion is held constant mathematically, greater convergence is nevertheless still manifested in group-centered units.

Further experimentation with group- and leader-centered units (3) suggests the simple hypothesis that the individual's conformity to a perceptual norm is a function of how much he likes the group. One consequence of the maximized verbal interaction in the group-centered unit was that the members liked their group as a whole better, as measured on a simple 11-point affect scale, than was the case for members of leader-centered units. The average rating of the group as a whole was 3.62 scale points for one group-centered unit in this latter experiment, contrasted to 2.00 for its matched leader-centered unit, and 3.28 for another group-centered section, compared to 2.06 for the leader-centered unit matched with it. Both differences are statistically significant, with a  $P$  of less than .01.



To complete the case for the hypothesis, the influence of affect on perception was recently demonstrated in an experiment by Sherif (11). Judgments by a naive person of extent of autokinetic movement were shown to be influenced positively by the judgments of a planted experimenter, a girl whom this individual was known to be partial to, and apparently influenced negatively by judgments of a planted experimenter towards whom he was known to entertain mild feelings of hostility.

As has been indicated, the individual in group-centered structure certainly likes his unit better. It can be suggested that it is for this reason that the individual judgments of other members of such a unit, and their average, for the length of the green rectangle, have more weight for the member of the group-centered unit, than the corresponding judgments and their average have for his colleague in the leader-centered unit. In short, the verdict of the group probably carries a greater affective loading for the member of the group-centered unit.

A simple test of this explanatory hypothesis might be the correlation obtained between the relative convergence on a perceptual norm (the amount of change in standard deviation expressed as a proportion of the initial standard deviation), and the average rating of the group as a whole by its members on an affect scale, for a number of groups. It might be expected that more relative convergence would be obtained in those groups whose members liked their group as a whole better.

Results from this experiment suggest that in the friendlier atmosphere of social interaction in the group-centered unit, the individual may differ more widely in initial opinions, attitudes, and judgments from other members of the group, until these areas of behavior become part of the zone where conformity is demanded in this particular group. If this should happen, however, and the group should take a stand or formulate a norm for a specific area of behavior, then this norm or verdict would weigh more heavily with the individual in influencing his behavior than would be the case for the leader-centered unit.

The present experiment suggests that, paradoxically enough, the group having the widest initial latitude of behavior possible is also one in which more conformity can be obtained from the individual in those areas where the group demands it. And it suggests that the fundamental process in creation of such a permissive, yet basically powerful, group is verbal interaction among its members.

### Summary

The present study was designed to test the hypothesis that greater modification of perception of an objective stimulus in the direction of a common norm, following presentation of individual estimates and their

average, would be obtained in group-centered units than in leader-centered units. The principal procedural difference between these two kinds of groups was that member-to-member verbal interaction was at a maximum in the former, and held to a minimum in the latter. The stimulus to be judged was length of a green rectangle.

The procedure was to ask the members of each group under test to estimate anonymously the rectangle length, then inform them of the individual estimates and the average for the group, and finally to ask them to re-estimate the length. The announced purpose of the experiment was to determine the effect of passage of time on accuracy of perception. The difference in standard deviations obtained between the first and second judgments was taken as a measure of convergence for the group.

A total of 504 individuals in 20 different groups was used for the study.

### Conclusions

1. Individual perceptions of an objective stimulus by members of a group-centered unit will shift more in the direction of a common norm, when the individual judgments and the group average are made known, than will the perceptions of members of a leader-centered unit. Group-centered structure can thus be said to have more power to alter the perceptions of individuals in the direction of a common norm than has leader-centered structure.

2. The initial dispersion of perceptual estimates of an objective stimulus, before the individual estimates or their average is known, will be greater for group-centered structure than for leader-centered structure.

### REFERENCES

1. Allport, F. H. *Social Psychology*. Boston: Houghton Mifflin, 1924.
2. Bovard, E. W., Jr. Social norms and the individual. *Journal of Abnormal and Social Psychology*, 1948, 43, 62-69.
3. Bovard, E. W., Jr. The development of outcome measures for teaching procedures leading to group cohesion. Unpublished doctor's dissertation, Univ. of Michigan, 1949.
4. Bronfenbrenner, U., & Newcomb, T. M. Improvisations—an application of psychodrama in personality diagnosis. *Societry*, 1948, 1, 367-382.
5. Grinker, R. R., & Spiegel, J. P. *Men under stress*. Philadelphia: Blakiston, 1945.
6. Jenness, A. The role of discussion in changing opinion regarding a matter of fact. *Journal of Abnormal and Social Psychology*, 1942, 27, 279-296.
7. Luchins, A. S. Social influences on perception of complex drawings. *Journal of Social Psychology*, 1945, 21, 257-273.
8. McNemar, Q. *Psychological statistics*. New York: Wiley, 1949.
9. Schreiber, Rosalea A. The interaction of observer pairs in judging visual extent and movement. *Archives of Psychology*, 1945, No. 299.

10. Sherif, M. A study of some social factors in perception. *Archives of Psychology*, 1935, No. 187.
11. Sherif, M. *Social psychology*. New York: Harper, 1948.
12. Sherif, M., & Cantril, H. Psychology of attitudes. *Psychological Review*, 1945, 52, 295-319; 1946, 53, 1-25.
13. Slavson, S. R. *Introduction to group therapy*. New York: Commonwealth Fund, 1943.
14. Slavson, S. R. (Ed.). *The practice of group therapy*. New York: International Universities Press, 1947.

## Informal Social Communication

Leon Festinger

This article is a statement of the theoretical formulations which have been developed in the process of conducting a program of empirical and experimental research in informal social communication. It has grown out of our findings thus far and is, in turn, guiding the future course of the research program. This program of research concerns itself with finding and explaining the facts concerning informal, spontaneous communication among persons and the consequences of the process of communication. It would seem that a better understanding of the dynamics of such communication would in turn lead to a better understanding of various kinds of group functioning. The theories and hypotheses presented below vary considerably in precision, specificity and the degree to which corroborating data exist. Whatever the state of precision, however, the theories are empirically oriented and capable of being tested.

Since we are concerned with the spontaneous process of communication which goes on during the functioning of groups we must first differentiate the variety of types of communication which occur according to the theoretical conditions which give rise to tendencies to communicate. It is plausible to assume that separating the sources or origins of pressures to communicate that may act on a member of a group will give us fruitful areas to study. This type of differentiation or classification is, of course, adequate only if it leads to the separation of conceptually clear areas of investigation within which communication can be organized into statable theoretical and empirical laws.

We shall here deal with those few of the many possible sources of pressures to communicate in which we have thus far been able to make theoretical and empirical progress. We shall elaborate on the theory for regarding them as giving rise to pressures to communicate and on specific

From *Psychological Review*, 1950, 57, 271-282. The research was conducted under contract with the Office of Naval Research. Reprinted by permission of the author and the American Psychological Association.



hypotheses concerning the laws of communication which stem from these sources.

### Pressures toward Uniformity in a Group

One major source of forces to communicate is the pressure toward uniformity which may exist within a group. These are pressures which, for one reason or another, act toward making members of a group agree concerning some issue or conform with respect to some behavior pattern. It is stating the obvious, of course, to say that these pressures must be exerted by means of a process of communication among the members of the group. One must also specify the conditions under which such pressures toward uniformity arise, both on a conceptual and an operational level, so that in any specific situation it is possible to say whether or not such pressures exist. We shall, in the following discussion, elaborate on two major sources of pressures toward uniformity among people, namely, **social reality and group locomotion.**

*Social reality.* Opinions, attitudes, and beliefs which people hold must have some basis upon which they rest for their validity. Let us, as a start, abstract from the many kinds of bases for the subjective validity of such opinions, attitudes, and beliefs one continuum along which they may be said to lie. This continuum we may call a scale of degree of physical reality. At one end of this continuum, namely, complete dependence upon physical reality, we might have an example such as this: A person looking at a surface might think that the surface is fragile or he might think that the surface is unbreakable. He can very easily take a hammer, hit the surface, and quickly be convinced as to whether the opinion he holds is correct or incorrect. After he has broken the surface with a hammer, it will probably make little dent upon his opinion if another person should tell him that the surface is unbreakable. It would thus seem that where there is a high degree of dependence upon physical reality for the subjective validity of one's beliefs or opinions, the dependence upon other people for the confidence one has in these opinions or beliefs is very low.

At the other end of the continuum where the dependence upon physical reality is low or zero, we might have an example such as this: A person looking at the results of a national election feels that if the loser had won, things would be in some ways much better than they are. Upon what does the subjective validity of this belief depend? It depends to a large degree on whether or not other people share his opinion and feel the same way he does. If there are other people around him who believe the same thing, then his opinion is, to him, valid. If there are not others who believe the same thing, then his opinion is, in the same sense, not valid. Thus where

the dependence upon physical reality is low, the dependence upon social reality is correspondingly high. An opinion, a belief, an attitude is "correct," "valid," and "proper" to the extent that it is anchored in a group of people with similar beliefs, opinions, and attitudes.

This statement, however, cannot be generalized completely. It is clearly not necessary for the validity of someone's opinion that everyone else in the world think the way he does. It is only necessary that the members of that group to which he refers this opinion or attitude think the way he does. It is not necessary for a Ku Klux Klanner that some northern liberal agree with him in his attitude toward Negroes, but it is eminently necessary that there be other people who also are Ku Klux Klanners and who do agree with him. The person who does not agree with him is seen as different from him and not an adequate referent for his opinion. The problem of independently defining which groups are and which groups are not appropriate reference groups for a particular individual, and for a particular opinion or attitude, is a difficult one. It is to some extent inherently circular since an appropriate reference group tends to be a group which does share a person's opinions and attitudes, and people tend to locomote *into* such groups—and *out of* groups which do not agree with them.

From the preceding discussion it would seem that if a discrepancy in opinion, attitude, or belief exists among persons who are members of an appropriate reference group, forces to communicate will arise. It also follows that the less "physical reality" there is to validate the opinion or belief, the greater will be the importance of the social referent, the group, and the greater will be the forces to communicate.

*Group locomotion.* Pressures toward uniformity among members of a group may arise because such uniformity is desirable or necessary in order for the group to move toward some goal. Under such circumstances there are a number of things one can say about the magnitude of pressures toward uniformity.

They will be greater to the extent that the members perceive that group movement would be facilitated by uniformity.

The pressures toward uniformity will also be greater, the more dependent the various members are on the group in order to reach their goals. The degree to which other groups are substitutable as a means toward individual or group goals would be one of the determinants of the dependence of the member on the group.

We have elaborated on two sources of pressure toward uniformity among members of groups. The same empirical laws should apply to communications which result from pressures toward uniformity irrespective of the particular reasons for the existence of the pressures. We shall

now proceed to enumerate a set of hypotheses concerning communication which results from pressures toward uniformity.

### **Hypotheses about Communication Resulting from Pressures toward Uniformity**

Communications which arise from pressures toward uniformity in a group may be seen as "instrumental" communications. That is, the communication is not an end in itself but rather is a means by which the communicator hopes to influence the person he addresses in such a way as to reduce the discrepancy that exists between them. Thus we should examine the determinants of: (a) when a member communicates, (b) to whom he communicates and (c) the reactions of the recipient of the communication.

1. Determinants of the magnitude of pressure to communicate:

**Hypothesis 1a.** The pressure on members to communicate to others in the group concerning "item x" increases monotonically with increase in the perceived discrepancy in opinion concerning "item x" among members of the group.

Remembering that we are considering only communication that results from pressures toward uniformity, it is clear that if there are no discrepancies in opinion—uniformity already exists in the group—there will be no forces to communicate. It would be plausible to expect the force to communicate to increase rapidly from zero as the state of affairs departs from uniformity.

**Hypothesis 1b.** The pressure on a member to communicate to others in the group concerning "item x" increases monotonically with increase in the degree of relevance of "item x" to the functioning of the group.

If "item x" is unimportant to the group in the sense of not being associated with any of the values or activities which are the basis for the existence of the group, or if it is more or less inconsequential for group locomotion, then there should be few or no forces to communicate even when there are perceived discrepancies in opinion. As "item x" becomes more important for the group (more relevant), the forces to communicate when any given magnitude of perceived discrepancy exists should increase.

Corroborative evidence for this hypothesis is found in an experiment by Schachter (8) where discussion of the same issue was experimentally made relevant for some groups and largely irrelevant for others. It is clear from the data that where the discussion was relevant to the functioning of the group there existed stronger forces to communicate and to influence the other members. Where the issue is a relevant one, the members

make longer individual contributions to the discussion and there are many fewer prolonged pauses in the discussion.

**Hypothesis 1c.** The pressure on members to communicate to others in the group concerning "item x" increases monotonically with increase in the cohesiveness of the group.

Cohesiveness of a group is here defined as the resultant of all the forces acting on the members to remain in the group. These forces may depend on the attractiveness or unattractiveness of either the prestige of the group, members in the group, or the activities in which the group engages. If the total attraction toward the group is zero, no forces to communicate should arise; the members may as easily leave the group as stay in it. As the forces to remain in the group increase (given perceived discrepancies in opinion and given a certain relevance of the item to the functioning of the group), the pressures to communicate will increase.

Data from an experiment by Back (1) support this hypothesis. In this experiment, groups of high and low cohesiveness were experimentally created using three different sources of attraction to the group; namely, liking the members, prestige attached to belonging, and possibility of getting a reward for performance in the group activity. For each of the three types of attraction to the group, the more cohesive groups were rated as proceeding at a more intense rate in the discussion than the corresponding less cohesive groups. In addition, except for the groups where the attraction was the possibility of reward (perhaps due to wanting to finish and get the reward), there was more total amount of attempted exertion of influence in the highly cohesive groups than in the less cohesive groups. In short, highly cohesive groups, having stronger pressures to communicate, discussed the issue at a more rapid pace and attempted to exert more influence.

## 2. Determinants of choice of recipient for communications:

**Hypothesis 2a.** The force to communicate about "item x" to a particular member of the group will increase as the discrepancy in opinion between that member and the communicator increases.

We have already stated in Hypothesis 1a that the pressure to communicate in general will increase as the perceived nonuniformity in the group increases. In addition, the force to communicate will be strongest toward those whose opinions are most different from one's own and will, of course, be zero towards those in the group who at the time hold the same opinion as the communicator. In other words, people will tend to communicate to those within the group whose opinions are most different from their own.

There is a clear corroboration of this hypothesis from a number of studies. In the previously mentioned experiment by Schachter (8), the distribution of opinions expressed in the group was always as follows:



Most of the members' opinions clustered within a narrow range of each other while one member, the deviate, held and maintained an extremely divergent point of view. About five times as many communications were addressed to the holder of the divergent point of view as were addressed to the others.

In an experiment by Festinger and Thibaut (5) the discussion situation was set up so that members' opinions on the issue spread over a considerable range. Invariably 70%–90% of the communications were addressed to those who held opinions at the extremes of the distribution. The curve of number of communications received falls off very rapidly as the opinion of the recipient moves away from the extreme of the distribution. The hypothesis would seem to be well substantiated.

**Hypothesis 2b.** The force to communicate about "item x" to a *particular person* will decrease to the extent that he is perceived as not a member of the group or to the extent that he is not wanted as a member of the group.

From the previous hypothesis, it follows that communications will tend to be addressed mainly toward those with extreme opinions within the group. This does not hold, however, for any arbitrarily defined group. The present hypothesis, in effect, states that such relationships will apply only within *psychological* groups, that is, collections of people that exist as groups psychologically for the members. Communications will tend not to be addressed towards those who are not members of the group.

The study by Schachter (8) and the study by Festinger and Thibaut (5) both substantiate this hypothesis. In Schachter's experiment, those group members who do not want the person holding the extremely divergent point of view to remain in the group tend to stop communicating to him towards the end of the discussion. In the experiment by Festinger and Thibaut, when the subjects have the perception that the persons present include different kinds of people with a great variety of interests, there tends to be less communication toward the extremes in the last half of the discussion after the rejection process has had time to develop. In short, communication towards those with different opinions decreases if they are seen as not members of the *psychological* group.

**Hypothesis 2c.** The force to communicate "item x" to a particular member will increase the more it is perceived that the communication will change that member's opinion in the desired direction.

A communication which arises because of the existence of pressures toward uniformity is made in order to exert a force on the recipient in a particular direction; that is, to push him to change his opinion so that he will agree more closely with the communicator. If a member is perceived as very resistant to changing his opinion, the force to communicate to him decreases. If it seems that a particular member will be changed as the result of a communication so as to increase the discrepancy between

him and the communicator, there will exist a force not to communicate to him. Thus under such conditions there will be tendencies *not* to communicate this particular item to that member.

There is some corroboration for this hypothesis. In a face-to-face verbal discussion where a range of opinion exists, the factors which this hypothesis points to would be particularly important for those members whose opinions were near the middle of the range. A communication which might influence the member at one extreme to come closer to the middle might at the same time influence the member at the other extreme to move farther away from the middle. We might then expect from this hypothesis that those holding opinions in the middle of the existing range would communicate less (because of the conflict) and would address fewer communications to the whole group, attempting to influence only one person at a time.

A number of observations were conducted to check these derivations. Existing groups of clinical psychologists, who were engaging in discussions to reconcile their differences in ratings of applicants, were observed. Altogether, 147 such discussions were observed in which at least one member's opinion was in the middle of the existing range. While those with extreme opinions made an average of 3.16 units of communication (number of communications weighted by length of the communication), those with middle opinions made an average of only 2.6 units of communication. While those with extreme opinions addressed 38% of their communications to the whole group, those with middle opinions addressed only 29% of their communications to everyone.

### 3. Determinants of change in the recipient of a communication:

**Hypothesis 3a.** The amount of change in opinion resulting from receiving a communication will increase as the pressure towards uniformity in the group increases.

There are two separate factors which contribute to the effect stated in the hypothesis. The greater the pressure towards uniformity, the greater will be the amount of influence exerted by the communications and, consequently, the greater the magnitude of change that may be expected. But the existence of pressures toward uniformity will not only show itself in increased attempts to change the opinions of others. Pressures toward uniformity will also produce greater readiness to change in the members of the group. In other words, uniformity may be achieved by changing the opinions of others or by changing one's own opinions, or both. Thus we may expect that with increasing pressure towards uniformity there will be less resistance to change on the part of the members. Both of these factors will contribute to produce greater change in opinion when the pressure toward uniformity is greater.

There is evidence corroborating this hypothesis from the experiment by

Festinger and Thibaut (5). In this experiment three degrees of pressure towards uniformity were experimentally induced in different groups. Irrespective of which of two problems were discussed by the group, and irrespective of whether they perceived the group to be homogeneously or heterogeneously composed, the results consistently show that high pressure groups change most, medium pressure groups change next most, and low pressure groups change least in the direction of uniformity. While the two factors which contribute to this effect cannot be separated in the data, their joint effect is clear and unmistakable.

**Hypothesis 3b.** The amount of change in opinion resulting from receiving a communication will increase as the strength of the resultant force to remain in the group increases for the recipient.

To the extent that a member wishes to remain in the group, the group has power over that member. By power we mean here the ability to produce real change in opinions and attitudes, and not simply change in overt behavior which can also be produced by means of overt threat. If a person is unable to leave a group because of restraints from the outside, the group can then use threats to change overt behavior. Covert changes in opinions and attitudes, however, can only be produced by a group by virtue of forces acting on the member to remain in the group. Clearly, the maximum force which the group can successfully induce on a member counter to his own forces cannot be greater than the sum of the forces acting on that member to remain in the group. The greater the resultant force to remain in the group, the more effective will be the attempts to influence the member.

This hypothesis is corroborated by two separate studies. Festinger, Schachter, and Back (4) investigated the relationship between the cohesiveness of social groups in a housing project (how attractive the group was for its members), and how effectively a group standard relevant to the functioning of the group was maintained. A correlation of .72 was obtained between these two variables. In other words, the greater the attractiveness of the group for the members, the greater was the amount of influence which the group could successfully exert on its members, with the result that there existed greater conformity in attitudes and behavior in the more cohesive groups.

Back (1) did a laboratory experiment specifically designed to test this hypothesis. By means of plausible instructions to the subjects, he experimentally created groups of high and low cohesiveness; that is, conditions in which the members were strongly attracted to the group and those in which the attraction to the group was relatively weak. The subjects, starting with different interpretations of the same material, were given an opportunity to discuss the matter. Irrespective of the source of the attraction to the group (Back used three different types of attraction in both high

and low cohesive conditions), the subjects in the high cohesive groups influenced one another's opinions more than the subjects in the low cohesive groups. In short, the greater the degree of attraction to the group, the greater the amount of influence actually accomplished.

**Hypothesis 3c.** The amount of change in opinion resulting from receiving a communication concerning "item x" will decrease with increase in the degree to which the opinions and attitudes involved are anchored in other group memberships or serve important need satisfying functions for the person.

If the opinion that a person has formed on some issue is supported in some other group than the one which is at present attempting to influence him, he will be more resistant to the attempted influence. Other sources of resistance to being influenced undoubtedly come from personality factors, ego needs and the like.

Specific evidence supporting this hypothesis is rather fragmentary. In the study of social groups in a housing project by Festinger, Schachter, and Back (4), the residents were asked whether their social life was mainly outside the project or not. Of those who conformed to the standards of their social groups within the project, about 85% reported that their social life was centered mainly within the project. Less than 50% of those who did not conform to the standards of the project social group, however, reported that their social life was centered mainly in the project. It is likely that they were able to resist the influences from within the project when their opinions and attitudes were supported in outside groups.

The experiments by Schachter (8) and by Festinger and Thibaut (5) used the same discussion problem in slightly different situations. In the former experiment, subjects identified themselves and verbally supported their opinions in face-to-face discussion. In the latter experiment, the subjects were anonymous, communicating only by written messages on which the sender of the message was not identified. Under these latter conditions many more changes in opinion were observed than under the open verbal discussion situation, even though less time was spent in discussion when they wrote notes. This difference in amount of change in opinion is probably due to the ego defensive reactions aroused by openly committing oneself and supporting one's opinions in a face-to-face group.

#### 4. Determinants of change in relationship among members:

**Hypothesis 4a.** The tendency to change the composition of the psychological group (pushing members out of the group) increases as the perceived discrepancy in opinion increases.

We have already discussed two of the responses which members of groups make to pressures toward uniformity; namely, attempting to influence others, and being more ready to be influenced. There is still a third response which serves to move toward uniformity. By rejecting those



whose opinions diverge from the group, and thus redefining who is and who is not in the psychological group, uniformity can be accomplished. The greater the discrepancy between a person's opinion and the opinion of another, the stronger are the tendencies to exclude the other person from the psychological group.

There is evidence that members of groups do tend to reject those whose opinions are divergent. In the study of social groups within a housing project, Festinger, Schachter, and Back (4) found that those who did not conform to the standards of their social group were underchosen on a sociometric test; that is, they mentioned more persons as friends of theirs than they received in return. Schachter (8) did an experiment specifically to test whether or not members of groups would be rejected simply for disagreeing on an issue. Paid participants in the groups voiced divergent or agreeing opinions as instructed. In all groups the paid participant who voiced divergent opinion on an issue was rejected on a postmeeting questionnaire concerning whom they wanted to have remain in the group. The same paid participants, when voicing conforming opinions in other groups, were not rejected.

**Hypothesis 4b.** When nonconformity exists, the tendency to change the composition of the psychological group increases as the cohesiveness of the group increases and as the relevance of the issue to the group increases.

We have previously discussed the increase in forces to communicate with increase in cohesiveness and relevance of issue. Similarly, these two variables affect the tendency to reject persons from the group for nonconformity. Theoretically, we should expect any variable which affected the force to communicate (which stems from pressures toward uniformity) to affect also the tendency to reject nonconformers in a similar manner. In other words, increases in the force to communicate concerning an item will go along with increased tendency to reject persons who disagree concerning that item.

The previously mentioned experiment by Schachter (8) was designed to test this hypothesis by experimentally varying cohesiveness and relevance in club groups. In this experiment the more cohesive groups do reject the nonconformer more than the less cohesive groups, and the groups where the issue is relevant reject the nonconformer more than groups where the issue is not very relevant to the group functioning. Those groups where cohesiveness was low and the issue was not very relevant show little, if any, tendency to reject the deviate.

### **Forces to Change One's Position in a Group**

Another important source of forces to communicate are the forces which act on members of groups to locomote (change their position) in the group, or to move from one group to another. Such forces to locomote may

stem from the attractiveness of activities associated with a different position in the group or from the status of that position, or the like. Thus a new member of a group may wish to become more central in the group, a member of an organization may wish to rise in the status hierarchy, a member of a business firm may want to be promoted, or a member of a minority group may desire acceptance by the majority group. These are all instances of forces to locomote in a social structure.

It is plausible that the existence of a force acting on a person in a specific direction produces behavior in that direction. Where locomotion in the desired direction is not possible, at least temporarily, there will exist a force to communicate in that direction. The existence of a force in a specific direction will produce behavior in that direction. One such kind of behavior is communication. This hypothesis is not very different from the hypothesis advanced by Lewin (6) to account for the superior recall of interrupted activities.

An experiment by Thibaut (9) tends to corroborate this theoretical analysis. In his experiment he created two groups—one of high status and privileged, the other of low status and underprivileged. These two groups, equated in other respects, functioned together so that the members of the high status group could play an attractive game. The low status group functioned merely as servants. It was clear that forces were acting on the members of the low status group to move into the other group. As the privileged position of the high status group became clearer and clearer, the amount of communication from the low status team to the high status group increased. The number of communications from members of the high status group to the low status group correspondingly decreased. When, in some groups, the status and privilege relationship between the two teams was reversed toward the end of the experimental session, thus reducing the forces to locomote into the other group, the number of communications to that other group correspondingly decreased.

Further corroboration is found in a preliminary experiment, mainly methodologically oriented, conducted by Back *et al.* (2). In this experiment new items of information were planted with persons at various levels in the hierarchy of a functioning organization. Data on transmission of each of the items of information were obtained through cooperators within the organization who were chosen so as to give adequate coverage of all levels and all sections within it. These cooperators recorded all instances of communication that came to their attention. Of 17 acts of communication recorded in this manner, 11 were directed upwards in the hierarchy, four toward someone on the same level and only two were directed downwards. The existence of forces to move upward in such a hierarchical organization may be taken for granted. The great bulk of

the communications recorded went in the same direction as these forces to locomote.

In considering communication among members of differentiated social structures, it is important also to take into account restraints against communication.

Infrequent contact in the ordinary course of events tends to erect restraints against communication. It is undoubtedly easier to communicate a given item to a person whom one sees frequently, or to a person to whom one has communicated similar items in the past. The structuring of groups into hierarchies, social clusters, or the like, undoubtedly tends to restrict the amount and type of contact between members of certain different parts or levels of the group, and also undoubtedly restricts the content of the communication that goes on between such levels in the ordinary course of events. These restrictions erect restraints against certain types of communication.

There are some data which tend to specify some of the restraints against communication which do exist. In the study of the communication of a spontaneous rumor in a community by Festinger, Cartwright *et al.* (3), it was found that intimacy of friendship tended to increase ease of communication. Persons with more friends in the project heard the rumor more often than those with only acquaintances. Those who had few friends or acquaintances heard the rumor least often. At the same time, this factor of intimacy of friendship was not related to how frequently they relayed the rumor to others. In other words, it was not related to forces to communicate, but seemed to function only as a restraint against communicating where friendship did not exist.

There is also some evidence that the mere perception of the existence of a hierarchy sets up restraints against communication between levels. Kelley (7) experimentally created a two-level hierarchy engaging in a problem solving task during which they could and did communicate within levels and between levels. Control groups were also run with the same task situation, but with no status differential involved between the two subgroups. There was more communication between subgroups under these control conditions than where there was a status differential involved.

It seems that, in a hierarchy, there are also restraints against communicating hostility upwards when the hostility is about those on upper levels. In the same experiment by Kelley there was much criticism of the *other group* expressed by both high status and low status members. The proportion of these critical expressions which are directed upward by the low status group is much less, however, than the proportion directed downward by the high status groups.

### Emotional Expression

An important variety of communications undoubtedly results from the existence of an emotional state in the communicator. The existence of joy, anger, hostility, and the like seems to produce forces to communicate. It seems that communications resulting from the existence of an emotional state are consummatory rather than instrumental.

By an instrumental communication, we mean one in which the reduction of the force to communicate depends upon the effect of the communication on the recipient. Thus in communication resulting from pressures toward uniformity in a group, the mere fact that a communication is made does not affect the force to communicate. If the effect has been to change the recipient so that he now agrees more closely with the communicator, the force to communicate will be reduced. If the recipient changes in the opposite direction, the force to communicate to him will be increased.

By a consummatory communication, we mean one in which the reduction of the force to communicate occurs as a result of the expression and does not depend upon the effect it has on the recipient. Certainly in the case of such communications the reaction of the recipient may introduce new elements into the situation which will affect the force to communicate, but the essence of a consummatory communication is that the simple expression does reduce the force.

Specifically with regard to the communication of hostility and aggression, much has been said regarding its consummatory nature. The psychoanalytic theories of catharsis, in particular, develop the notion that the expression of hostility reduces the emotional state of the person. There has, however, been very little experimental work done on the problem. The previously mentioned experiment by Thibaut in which he created a "privileged-underprivileged" relationship between two equated groups has some data on the point. There is evidence that those members of the "underprivileged" groups who expressed their hostility toward the "privileged" groups showed less residual hostility toward them in post-experimental questionnaires. There is, however, no control over the reactions of the recipients of the hostile communications nor over the perceptions of the communicators of what these reactions were. An experiment is now in progress which will attempt to clarify some of these relationships with both negative and positive emotional states.

### Summary

A series of interrelated hypotheses has been presented to account for data on informal social communication collected in the course of a num-



ber of studies. The data come from field studies and from laboratory experiments specifically designed to test the hypotheses.

Three sources of pressures to communicate have been considered:

1. Communication arising from pressures toward uniformity in a group. Here we considered determinants of magnitude of the force to communicate, choice of recipient for the communication, magnitude of change in recipient, and magnitude of tendencies to reject nonconformers.

2. Communications arising from forces to locomote in a social structure. Here we considered communications in the direction of a blocked locomotion, and restraints against communication arising in differentiated social structures.

3. Communications arising from the existence of emotional states. In this area data are almost completely lacking. Some theoretical distinctions were made, and an experiment which is now in progress in this area was outlined.

#### REFERENCES

1. Back, K. Influence through social communication. *Journal of Abnormal and Social Psychology*, 1951, **46**, 9-23.
2. Back, K., Festinger, L., Hymovitch, B., Kelley, H. H., Schachter, S., & Thibaut, J. The methodology of studying rumor transmission. *Human Relations*, 1950, **3**, 307-313.
3. Festinger, L., Cartwright, D., *et al.* A study of rumor: its origin and spread. *Human Relations*, 1948, **1**, 464-486.
4. Festinger, L., Schachter, S., & Back, K. *Social pressures in informal groups: a study of a housing project*. New York: Harper, 1950.
5. Festinger, L., & Thibaut, J. Interpersonal communication in small groups. *Journal of Abnormal and Social Psychology*, 1951, **46**, 92-99.
6. Lewin, K. Formalization and progress in psychology. *University of Iowa Studies in Child Welfare*, 1940, **16**, No. 3.
7. Kelley, H. H. Communication in experimentally created hierarchies. *Human Relations*, 1951, **4**, 39-56.
8. Schachter, S. Deviation, rejection, and communication. *Journal of Abnormal and Social Psychology*, 1951, **46**, 190-207.
9. Thibaut, J. An experimental study of the cohesiveness of underprivileged groups. *Human Relations*, 1950, **3**, 251-278.

## The Operation of Group Standards

Leon Festinger, Stanley Schachter, and Kurt Back

The term *group standard*, or *group norm*, has been used freely either to describe or to explain the rather well substantiated finding that members of the same face-to-face group exhibit relative uniformity with respect to specified opinions and modes of behavior. The use of the term, whether in a descriptive or an explanatory manner, has generally carried with it the meaning that this observed uniformity derives in some manner from influences which the group is able to exert over its members. The fact that members of some social set all have relatively similar tastes in, for example, selecting recreational activities, has generally been explained on the basis of interindividual or group influences rather than on the basis of similar circumstances producing similar but independent reactions in a number of people.

There is no question any longer that individuals and groups do exert influences on others which can and do result in uniform opinions and behavior patterns. There have been many studies which have demonstrated the existence and importance of this phenomenon. The classic experiment by Sherif (3) clearly demonstrated that, at least in a situation which was almost completely unstructured, the individual was virtually entirely dependent upon the group for forming a stable mode of response. The strength of the group influence was plainly sufficient to override most individual factors.

It has also been shown, by a series of independent studies (1), that people's aspirations and goal-setting behavior are strongly influenced by information they possess about how others behave and then relationship to these others. All of these influences produce changes in the individual's behavior which result in his being more similar to other members of the group to which he feels he belongs.

Once we depart from the well controlled laboratory situation it is no longer easy to claim unequivocally that observed uniformity is due to

Condensed from Chapters 5 and 6 of the book by the same authors entitled *Social pressures in informal groups*. New York: Harper, 1950. Reprinted by permission of the authors and Harper & Bros.

group influence. Newcomb (2), for example, in his study of a college community which had a reputation for being liberal found that students consistently became more liberal with increasing length of attendance at the college. It is possible plausibly to maintain that these changing attitudes resulted from group pressures and influences once the student became a member of the community. It would also, however, be possible to maintain that these changes occurred in different people independently as a result of the similar experiences, curricular and otherwise, to which they were all subjected in the rather unique college. The demonstration that a group standard existed would indeed be difficult. Such demonstration would have to rest upon a series of empirical facts concerning the means by which the group enforces the standard, the relation between the pattern of conformity and the group structure, and the relationship to the group of members who deviate from the standard.

The study to be reported here undertook to investigate the nature and operation of group standards in two housing projects. These two projects, Westgate and Westgate West, were occupied by families of students of the Massachusetts Institute of Technology. The homes in Westgate were houses arranged in U-shaped courts. Those in Westgate West were apartments in rows of two-story barracklike structures. The same tenants' organization served both projects. The court in Westgate, and the building in Westgate West, had become the unit of social life in these projects by the time of the study. Friendship groups formed mainly within the court and within the building. The backgrounds and interests of the residents were relatively homogeneous throughout both projects and the assignment of houses or apartments to particular people had not been made on any kind of selective basis. It was also clear that there had been no differential treatment of courts or of buildings. The study of group standards might consequently be pursued fruitfully by carefully examining the reasons for differences in behavior among these social units where such differences emerged.

It was found that differences between courts did exist to a rather marked extent on matters concerning the Westgate tenants' organization. This organization was, at least potentially, of equal relevance and importance to all residents of Westgate and of Westgate West, and all residents were urged to support it. Representation in the Westgate Council was on the basis of courts and buildings, and consequently called for action from each court and each building. Yet, in spite of this equality of relevance, some courts and buildings supported the organization, others were overtly hostile, while still others were indifferent. We shall proceed to examine the determinants of these differences among courts and among buildings to see whether group standards were or were not operating and, if they were, how they made themselves effective.

## Attitudes toward the Westgate Council

By May of 1947, when interview data concerning the attitudes of residents toward the Westgate organization were collected, the Council had almost completed the first semester of active existence. Since the turnover in residents occurred mainly at the break between semesters, practically all residents who were living there at the time of the interview had been living in the project when the Council started its active program.

All of the 100 Westgate families and 166 of the 170 Westgate West families were asked, as part of a larger interview, "We understand there is a tenants' organization here. What do you think of it? Are you active in it?" The interviewers were instructed to follow these questions with non-directive probes until they were satisfied that they had obtained an adequate picture of the attitude toward the organization and the degree and kind of participation in its activities. These data were then categorized in the following way:

### Attitudes toward the Organization

*Favorable.* People who considered the organization primarily a good thing. Usually they endorsed both the idea of organization as such and some aims of the Council. Statements ranged from warm approval, "I am definitely in favor of it. It's a worth-while project. It's functioning well," to a vaguely approving, "It's all right."

*Neutral.* People who mentioned specific good and bad points about the organization so that no definitely favorable or unfavorable attitude could be assigned. In effect, this category included border-line people who had some basic attitude, but saw many points contrary to it. Examples are: "I guess it's all right if they accomplish something—I don't think they have as yet." "It's a good idea, but there are not too many problems for the community to deal with."

*Apathetic.* People who said they had not been interested enough to find out anything about the organization. In a sense this is a mildly unfavorable attitude—the organization did not concern them. On the other hand, they did not express any directly unfavorable opinion: "Don't know anything about it. Haven't been to any of the meetings or anything. Not knowing, I wouldn't want to say anything."

*Unfavorable.* People who expressed a definitely unfavorable opinion about the organization, saying that it was a waste of time, that the people in it were objectionable, that they never would achieve anything. "A large majority of the members are reactionary. They give no attention to wider aspects." "It's unnecessary and highschoolish."

### Activities in the Organization

*Active leader.* People who took a definite part in the activities of the Council as a whole, as representatives, committee members, or doing volunteer work. "We've been to meetings as delegates two or three times. I volunteered as bar-



tender for the block party." "I am one of the court representatives. I'm a member of the welcoming committee greeting new residents."

*Active follower.* People who, though not active in the sense of the previous category, had attended more than one court meeting. They cooperated with the Council as it was set up on the court level. They went to the meetings in which the representatives were elected. They listened to the representatives' reports of the Council's actions and gave their suggestions and complaints to be taken up in the next meeting. They were, therefore, a necessary working part of the organization, although they took no part in the workings of the Council as such. "We have been to the building meetings; that's as far as it goes." "We go to the meetings. Everybody goes to them."

*Inactive.* People who did not make any effort to keep in contact with the organization. This included both the people who belonged (that is, they considered themselves represented by the Council) and those who did not feel even a formal connection with the Council. From the point of view of actual behavior, these two groups are indistinguishable. "To be truthful, I'm not active. Splendid idea, but I'm too busy." The principal answer from this group was a curt "No." These people did not even attend court meetings.

The questions about attitudes and activity measure two different aspects of a person's relation to the organization. His attitude may stem from a variety of interests and beliefs. He may view the Council as a way of having certain needs satisfied, as a way to meet his fellow tenants, as unrelated to his needs, or as a childish pastime. It is clear that some of these ways of looking at the Council will lead more readily to activity than others. But a resident's actual activity will also depend on other factors—whether he has time, whether a neighbor draws him into some work, whether he sees something that he personally can do. It is therefore possible that attitude and activity may occur together in all combinations, although some are more likely than others. They are distinct, though correlated, variables.

### Patterns of Attitude and Activity

There were differences from one court to another in attitude toward and activity in the tenants' organization. This implies that within any one court there was relative homogeneity with respect to both of these factors. In the extreme case, where all members of a court coincided exactly on both of these dimensions, the demonstration of homogeneity would be a simple matter. This extreme case does not occur, of course, and some method must be devised for describing the pattern within any court both with respect to the content of the pattern and the degree of homogeneity. That is, is it a favorable and active court or is it an unfavorable and inactive court? Do 80% of the court members show this behavior and attitude combination, or do only 60% of the court members show it?

It seemed feasible, from the nature of the data, to distinguish four possible types of court patterns: namely, favorable-active, favorable-inactive, unfavorable-active, and unfavorable-inactive. Once it was determined in

which of these categories a court was located, the number of people in the court who conformed to or deviated from the court pattern could then be easily computed. When this was done it would be possible to proceed to a careful examination of whether or not the observed degree of homogeneity within courts was worthy of note, and whether or not it could be attributed to the existence of group standards.

If only these four types of patterns are to be distinguished we must, for this purpose, do some additional combining of the original categories into which the data were classified. This presents no problem for the activity dimension. Clearly the active leader and active follower categories should both be called active; but the combination of the attitude categories presents somewhat more of a problem. The extreme categories, favorable and unfavorable, clearly fall into their proper place. The categories of apathetic and neutral are not quite so clear. It was reasoned that the apathetic people were at least mildly unfavorable to the organization, since they either did not care to know about it or else had simply remained sufficiently out of things not to have heard about what was going on. On the basis of this reasoning, the apathetic people were classed as unfavorable.

The few residents who were classified as neutral were really borderline cases. To some extent they were favorable and to some extent unfavorable. Whatever the court pattern happens to be, in this sense they both conform to and deviate from it on the attitude dimension. In accordance with this view, the neutral people were not considered in determining the court pattern. In any event there were too few people thus categorized to have affected this determination much. Once the court pattern was determined, these neutrals were regarded as conformers if they fell into the proper activity category and were, of course, considered deviates if they did not.

We shall describe the method used for determining the court pattern by using Tolman Court as an example. Looking first at the activity dimension, we found that 12 residents were active and only one was not. On the attitude dimension, nine residents were favorable and two were unfavorable. The classification of this court, then, is "favorable-active." In this case, following our procedure for neutrals, we shall consider anybody who was neutral and active as conforming to the group standard. Of the two neutrals in the court, one followed the group standard and the other did not. The conformers include everybody who was favorable or neutral and active. There were 10 conformers and three deviates from the pattern.

A different type of pattern is shown in Main Court. Here six of the seven residents were inactive, while five were either apathetic or unfavorable. The pattern is therefore "unfavorable inactive." As the only neutral resident was active, he cannot be considered as conforming to the pattern, he and the favorable inactive resident were deviates. The five inactive

residents, who were either apathetic or unfavorable, conformed to the pattern.

This procedure was carried out for each of the nine Westgate courts and for each of the 17 Westgate West buildings. In Westgate, five of the courts showed a favorable-active pattern, one court showed a favorable-inactive pattern, and three courts showed an unfavorable-inactive pattern. Wide differences did exist among the courts. Also, within each court there was relative homogeneity. Five of the nine courts had a small proportion of deviates. In all but one of the courts the majority conformed to the court pattern.

In Westgate West the degree of homogeneity within the building was perhaps even more striking. Only four of the 17 buildings had as many as 40% deviates from the building pattern, and nine of the buildings had only one or two such deviates. In contrast to Westgate, however, there were no marked differences among the patterns in different buildings. Thirteen of the buildings had favorable-active patterns and four of them had favorable-inactive patterns. There were no buildings with an unfavorable pattern. While in Westgate there was evidence for homogeneity within the court, and heterogeneity among the courts, in Westgate West there seems to have been the same amount of homogeneity among buildings as was found within the building.

If we combine all courts into an over-all Westgate pattern, and all buildings into an over-all Westgate West pattern, this difference between the projects emerges even more clearly. These over-all patterns for the two projects are shown in Table 16.1. In Westgate, no homogeneous over-all pattern exists. Favorable attitudes were displayed by 54% of the residents, unfavorable or apathetic attitudes by 33%, while 49% were active and 51% inactive. If we use the same criteria for determining the over-all pattern here as was used for the individual courts, we would conclude that Westgate had a favorable-inactive pattern from which 78% of the residents deviated. Clearly, the greatest concentrations were in the favorable-active and the unfavorable-inactive quadrants. Even if we depart from our rigorous method of determining patterns and regard the pattern in Westgate as favorable-active, we still find that a majority (56%) of the residents were deviates.

The situation in Westgate West is clearly different. Here 79% of the residents were favorable and only 15% were unfavorable or apathetic, while 62% of the residents were active and 37% were inactive. The over-all pattern is favorable-active. Most of the deviation that did occur from this pattern was on the activity dimension, with little deviation on the attitude dimension.

What may we conclude from this analysis of the patterns within Westgate and within Westgate West? Do we as yet have any evidence for as-

TABLE 16.1  
ATTITUDE-ACTIVITY DISTRIBUTIONS  
(Percentage)

	Active Leaders	Active Followers	Inactive	Un-classified	Total
a. Westgate ( <i>N</i> = 100)					
Favorable	22	14	18		54
Neutral	2	6	4		12
Apathetic		1	15		16
Unfavorable	2	2	13		17
Unclassified			1		1
TOTAL	26	23	51		100
b. Westgate West ( <i>N</i> = 166)					
Favorable	16	38	24	1	79
Neutral		2	1		3
Apathetic	1	2	8		11
Unfavorable	1		3		4
Unclassified		2	1		3
TOTAL	18	44	37	1	100

NOTE: Significance of difference between Westgate and Westgate West:  
Attitude  $\chi^2 = 37.86$ ;  $p = .01$   
Activity  $\chi^2 = 12.42$ ;  $p = .01$

serting the existence or nonexistence of group standards? With regard to Westgate we can clearly say that there was no group standard for the project as a whole. There were obviously opposing subgroups within Westgate with regard to both attitude and activity. Can one, however, maintain that there were group standards within each court? At this point this conclusion would seem plausible, although it is by no means unequivocally demonstrated. We must, however, find some explanation why different courts, each composed of the same kinds of people in similar circumstances, reacted so differently from each other toward the organization and why, in spite of different reactions from different courts, there was relatively homogeneous behavior within each court. We at least are led to suspect that group standards or group norms were operating.

In Westgate West, however, we cannot come to the same conclusions. Here it is possible that a group standard existed for the project as a whole; it is possible that group standards existed within each building, and it is possible that no group standards or norms existed at all, but that the obtained high degree of uniformity was due to similar independent reac-



tions of the residents to the same state of affairs. As we have pointed out before, the hypothesis that the uniformity in Westgate West resulted from similar independent reactions of the residents seems probable on the basis of several considerations: Unlike the residents of Westgate, who had been living there up to 15 months and had had four months' actual experience with the organization, the residents of Westgate West were all relative newcomers. The oldest residents of Westgate West had only been living there about five months, and their contact with the Westgate organization had been limited. It was only about one month prior to the collection of these data that Westgate West actually joined the organization. We might expect, then, that in Westgate West, where the social groupings had not had time to form into cohesive units, and where the contact with the tenants' organization was only recent, group norms would not have developed to any considerable degree. The tenants, however, all in the same situation and pretty much the same kinds of people, tended individually to react favorably to the organization.

### The Evidence for Group Standards

On the basis of an examination of the actual distribution of conformity to and deviation from patterns of majority behavior, we have arrived at hypotheses concerning the reasons behind the observed degree of uniformity. It has seemed reasonable to suppose that group standards existed in the Westgate courts but that none existed in Westgate West. If this is true, there should be other differences between these two projects which would support these hypotheses. One derivation may immediately be made. If the behavior in Westgate was determined largely by group influences while the behavior in Westgate West was determined largely by individual reactions, then individual differences on relevant factors should show more relationship to attitude and activity in Westgate West than in Westgate.

The personal reasons which residents of the two projects gave for their attitudes, and for whether or not they participated in the activities of the organization, were numerous and varied. Some people had special interests which were aided by the organization; some did not believe in organized activities in general; some said they had no time; some felt that their efforts would be fruitless for the short time that remained for them to stay in the project. All these factors, and others of the same kind, were influences acting on the individual, independently of the group to which he belonged. It would have been desirable, but almost impossible, to obtain reliable indications as to whether or not each of these factors was operating on a particular individual.

Reliable data are at hand, however, concerning the length of time they

expected to remain in the project. This, of course, coincided with the length of time they expected to remain in school and was fairly frequently mentioned as a reason for not participating in the activities of the tenants' organization. These data reveal that there was hardly any difference in attitude between long-term and short-term residents in either Westgate or Westgate West.

The breakdown by activity tells a different story. In Westgate, again, little difference was found. The shortest time group—those moving out in June—could not be affected by any medium or long-range program of the Council. In spite of this, 9 out of 16 cooperated with the Council. The group expecting the longest residence—those who intended to stay at least for a year and were frequently indefinite about how much longer—cooperated even a little less with the Council; only 14 out of 29 fell into these categories. The differences are not statistically significant.

In the activity ratings of the Westgate West residents, however, we find that length of expected residence made a difference. Among the short-term residents, 50% were actively cooperating with the Council, while 72% of the long-term residents were. The median expected residence for the active leaders was 17 months; for the inactive residents 12 months. These differences are significant at the 5% level.

We thus find our derivation borne out. The data support our hypotheses concerning the difference between Westgate and Westgate West. In Westgate West, where individuals were reacting more or less independently in terms of their own needs and preferences, we find a significant and appreciable degree of relationship between how much longer they expected to stay in the project and whether or not they became active in the affairs of the tenants' organization. In Westgate, group influences were important. A major determinant of an individual's activity was whether or not others in his group were active. There was, consequently, no relationship at all between how long one expected to stay there, or how much benefit one would derive from the organizational activities, and whether or not one became active. We may reaffirm our hypotheses with somewhat more confidence now and look for the next testable derivation which we can make.

To be able to create and maintain group standards, a group must have power over its members. This power, the ability to induce forces on its members, has been called cohesiveness. If the group uses this power to make the members think and act in the same way, that is, if there are group standards, the homogeneity of the attitude and activity patterns should be related to the cohesiveness of the group. Correspondingly, if no relation exists between cohesiveness and homogeneity of the pattern, the group does not use its power to induce the members to conform, and we may take it as indicative of the absence of group standards.

The power of a group may be measured by the attractiveness of the group for the members. If a person wants to stay in a group, he will be susceptible to influences coming from the group, and he will be willing to conform to the rules which the group sets up.

The courts and buildings in Westgate and Westgate West were mainly social groups. The attractiveness of the group may, therefore, be measured by the friendships formed within the group. If residents had most of their friends within the court, the group was more attractive to them than if they had few friends within the court. The former situation will imply a more cohesive court, which should be able to induce stronger forces on its members. This should result in greater homogeneity within the more cohesive court than within the less cohesive one.

The necessary measures for determining the relationship between the cohesiveness of the court and the effectiveness of the group standard are easily obtained. Sociometric data from a question regarding who the residents saw most of socially may be used here. Thus, if the members of one court give a total of 30 choices, 18 of which are given to others in their own court, the percentage of "in-court" choices is 60. This court is then considered more cohesive than some other court which gives a total of 32 choices, only 16 of which are to others in the same court. The homogeneity of the court, or how effective the group standard is, may be measured simply by the percentage of members of the court who deviate from the court pattern. The more effective the group standard and the more

TABLE 16.2

COHESIVENESS OF COURT AND STRENGTH OF GROUP STANDARD  
(Westgate)

Court and N of Residents	% Deviates	Choices in Court	Choices in Court
		Total Choice	-½ Pairs Total Choice
Tolman 13	23	.62	.529
Howe 13	23	.63	.500
Rotch 8	25	.55	.523
Richards 7	29	.47	.433
Main 7	29	.67	.527
Freeman 13	38	.48	.419
Williams 13	46	.53	.447
Miller 13	46	.56	.485
Carson 13	54	.48	.403
<i>R.O. correlation with % deviates</i>		-.53	-.74
<i>t *</i>		1.65	2.92
<i>p</i>		.15	.02

\* Testing against zero of the rank order correlation as suggested by Kendall, M. G., *The Advanced Theory of Statistics*, London: Charles Griffin and Co., Limited, Vol. 1, p. 461, 1943.

homogeneous the court, the lower will be the percentage of members who deviate. The second and third columns of Tables 16.2 and 16.3 show the percentage of deviates and the proportion of "in-court" choices for each court in Westgate and for each building in Westgate West.

TABLE 16.3

COHESIVENESS OF BUILDING AND STRENGTH OF GROUP STANDARD  
(Westgate West)

Building	% Deviates	Choices in Building	Choices in Building— $\frac{1}{2}$ Pairs
		Total Choices	Total Choices
211-20	10	.58	.50
221-30	10	.66	.59
201-10	11	.60	.54
231-40	20	.80	.64
241-50	20	.70	.61
251-60	20	.74	.63
281-90	20	.80	.68
311-20	20	.66	.53
261-70	25	.57	.46
271-80	30	.47	.38
341-50	30	.62	.50
351-60	30	.85	.76
321-30	33	.62	.52
361-70	40	.67	.56
291-300	50	.59	.50
301-10	50	.72	.64
331-40	70	.42	.35
<i>R.O.</i> correlation with % deviates		-.20	-.27
<i>t</i>		.79	1.09
<i>p</i>		not significant	

From our hypotheses concerning the existence of group standards in the Westgate courts and the absence of group standards in the Westgate West buildings, we would expect to find an appreciable negative correlation in Westgate and no correlation in Westgate West between the percentage of deviates and the proportion of "in-court" choices. In Table 16.2 it may be seen that the correlation is  $-.53$  in Westgate. Here, the more cohesive the court (that is, the greater the proportion of "in-court" choices) the smaller the proportion of people who deviated from the court standard. As we expected, this correlation is virtually zero in Westgate West (Table 16.3). Here the proportion of people who deviated from the building pattern had little or nothing to do with the cohesiveness of the building group.



The measure of cohesiveness which we have used may, however, be considerably improved. The major uncertainty in the measure, as it stands, lies in our inability to distinguish between the cohesiveness of the whole group and the cohesiveness of subgroups. For example, a group of eight people all making choices within the group might or might not have high cohesiveness as a total group. As an extreme illustration, there conceivably might be two subgroups of four people each, every member within each subgroup choosing every other member, but without any choices at all between the subgroups. In this case each of the subgroups may have great cohesiveness, but the cohesiveness of the group as a whole would be low. Similarly, if in a group of eight or ten people there is a subgroup of three, the total group would be less cohesive than if no subgroup existed. It appears that if a strongly knit subgroup includes a large majority of the group, the cohesiveness of the whole group may still be high.

This effect of tendencies toward subgroup formation may be taken into account in our measure by correcting for the number of mutual choices which occurred. If there were no tendencies at all toward subgroup formation within a group, then the number of mutual choices which we would expect to occur would be quite low. In a group of ten people with each person giving, say, two choices within the group, we would only expect to obtain two mutual choices in the complete absence of tendencies toward subgroup or pair formation. As the tendencies toward subgroup formation increase, we shall expect to find more and more mutual choices. Thus, the existence of mutual choices to some extent decreases the cohesiveness of the group as a whole. \*

We may check further on whether or not this relationship was a property of the group as a whole. A corrected measure of cohesiveness, obtained by subtracting half of the number of mutual pairs of choices, is certainly meaningful only as a measure of the group as a whole. The fact that mutual choices occurred certainly does not detract from the personal attractiveness of the individuals involved in these mutual choices. We should then expect the correlation with the measure of prestige of the subgroup to increase when the corrected measure of cohesiveness is used. This correlation in Westgate is .75, representing an appreciable increase in relationship. In Westgate West, where the buildings did not constitute really functional social units, the correlation remains unchanged—still very close to zero.

### The Social Status of the Deviate

What are the conditions which produce deviates? When pressures and influences are being exerted on people to adopt a certain way of thinking or a certain pattern of behavior, some people conform quite readily while

others are able entirely to resist these influences. The mere knowledge that these "individual differences" exist does not explain the reasons for them or the factors which are responsible for producing deviates. To learn this, we must examine the means by which group influences may be resisted.

The pressure which a group exerts on its members may be overt and sometimes even formalized. Laws, rules, mores, etiquette, and so on exemplify some of these overt pressures. The pressures which induce men to open doors for women, to dress in certain special ways on certain special occasions, or to enter their fathers' businesses are all overt and recognized. It is likely, of course, that before a group norm or standard can become thus openly formalized it must be in existence for a long time, or else must be of such a nature that deviation from the standard is harmful to the group. Such open pressures are generally also accompanied by open punishment for deviation in the form of censure, overt disapproval, or even rejection from the group.

On the other hand, the pressures which a group exerts on its members may be subtle and difficult to locate. The weight of others' opinions, the gradual change in one's ideas of what is the "normal" thing to do simply because everyone else does it, the mutual influences of people who share their ideas and their attitudes, also serve effectively as pressures toward conformity with the behavior pattern of the group. Under these circumstances the consequences of nonconformity are also more subtle. These consequences may merely be a tendency to prefer those people who are not "different."

There is no indication that in Westgate there was any overt or formalized pressure on court members to conform to the court standard. Many of the residents realized that the people in their court were different from the people in some other court, but the influences which created and maintained these differences among courts were indirect and nonovert. Members of the courts were being influenced in their opinions and behavior merely by virtue of their association with others in their courts, without any formalized "group intent" to influence.

The strength of the influence which the group can exert in this manner depends partly upon the attractiveness of the group for the member and partly on the degree to which the member is in communication with others in the group. No matter how attractive the group is to a particular person, it will be impossible for the group to exert any influence on him if he is never in communication with the group. We may now examine some of the conditions under which individuals will be able to resist these influences.

1. The group may not be sufficiently attractive to the member. Under these circumstances, the relatively weak influence which the group exerts

cannot overcome personal considerations which may happen to be contrary to the group standard. An example will illustrate this phenomenon:

(*Mr. and Mrs. G. in Williams Court.*) We don't have any opinion at all about the organization. We're bad ones for you to interview. We have no need for an organization because we're pretty happy at home. We're socially self-sufficient. Others in the court feel it is wonderful and we discovered many that felt that way. We have friends in this and other courts but our main interests are in the home.

2. There may not be sufficient communication between the member and others in the group. Under these conditions the pressures from the group are simply not brought to bear on the member although, if they had been exerted, they might have been very effective. In such instances the deviate may not even be aware of the fact that he is different from most of the others in his group. An example of this type of deviate follows:

(*Mr. and Mrs. S. in Freeman Court.*) The organization is a good idea, but the trouble with people like us is that we don't have time. That's why we haven't had anything to do with it. I think it's the consensus of opinion that people here don't have the time. [Actually the majority of the people in the court were active.] There are wonderful people living here, but it seems peculiar to Westgate that people are hard to get to know. A lot of people come here expecting to make friends without any trouble, and then find it isn't so easy. It would be a good thing if the organization helped people to get acquainted.

3. The influence of some other group to which the people belong may be stronger than the influence which the court group is able to exert on them. Under these conditions the person who appears as a deviate is a deviate only because we have chosen, somewhat arbitrarily, to call him a member of the court group. He does deviate from his own court, but he conforms to some other group to which he actually feels he belongs. Such a group may, of course, be outside of Westgate altogether. There are instances, however, of people belonging to groups other than their own court, but still within the limits of Westgate:

(*Mr. and Mrs. M. in Carson Court.*) We think the organization is fine and Mrs. M is the chairman of the social committee which is holding its first big event tomorrow night. I don't see much of the others in this court. My real friends are in the next court over there, in Tolman Court. There are only two people living in this court that do anything for the organization, myself and one other person. It's generally understood that the others have different interests. The people in Tolman Court are more active. Carson Court people aren't as sociable as people in Tolman Court.

### The Deviate in Westgate

These three types of conditions do, then, appear to produce deviates; at least we were able to locate deviates who seemed to exhibit such patterns of relationship between themselves and the group. If these are the

major factors which make for nonconformity, we should also be able to demonstrate their relevance for all of the deviates rather than for a few selected examples. The two variables, attractiveness of the group for the member and amount of communication between the member and the group, should be reflected in the sociometric choices which people gave and received. We should expect that deviates would give fewer choices to others in their court and would receive fewer choices from them. Whether this happened because they were not in full communication with the group or because the group was not attractive to them, the result in the sociometric choices should be essentially the same—the deviates should be sociometric isolates in their court.

Table 16.1 shows the average number of "in-court" choices given and

TABLE 16.4  
AVERAGE NUMBER OF "IN-COURT" CHOICES OF DEVIATES AND  
CONFORMERS IN WESTGATE

	<i>N</i>	Choices Given	Choices Received
Deviates	36	1.25	1.11
Conformers	64	1.53	1.61

received by the 36 deviates and the 64 conformers in Westgate. It is readily apparent that the deviates were more isolated sociometrically than were the conformers. They both gave and received fewer choices than did the conformers.<sup>1</sup> Moreover, the conformers tended to receive more choices than they gave, while the deviates tended to receive fewer choices than they gave. Deviates tended to choose conformers more than conformers chose deviates. This might be called relative rejection by the conformers.

Deviate status, then, was accompanied by a smaller degree of association with others in the court. It is still possible, however, that these deviates were not true isolates, but merely members of groups other than the court group. In our case studies we saw two examples of this sort. An examination of all sociometric choices exchanged with people outside the court, however, reveals that this was not true of the deviates as a whole. Table 16.5 shows the average number of "out-court" choices given and received by the deviates and conformers. It is clear that the deviates, in the main, were not members of groups other than those of their own court. They gave only as many choices to people outside their own court as did

<sup>1</sup> The significance of the differences in this and the following tables was computed by taking the means for each court and comparing the distributions of these means. This was done because the effects of group standards made the groups, not the individual, the unit of sampling. This difference is significant at the 7% level of confidence for choices given. Significance is at the 17% level of confidence for choices received.



the conformers, but received considerably fewer choices from outside than the conformers.<sup>2</sup> We must conclude that these deviates, who had fewer associations within their own court, also had fewer associations with others in Westgate—at least, insofar as this is reflected by the number of choices they received.

TABLE 16.5  
AVERAGE NUMBER OF "OUT-COURT" CHOICES OF DEVIATES  
AND CONFORMERS IN WESTGATE

	<i>N</i>	Choices Given	Choices Received
Deviates	36	1.14	.89
Conformers	64	1.16	1.55

Choices given by deviates to people outside their own court tended to be given to the conformers in other courts. These conformers tended not to reciprocate the choices. The deviate, who was perceived as being different from the others in his court, was not as often chosen by outsiders. This is consistent with our knowledge that the court is perceived as the basis for social grouping in Westgate. People who were on the fringes of their own group were also on the fringe of social life between courts. While conformers in Westgate received an average of 3.16 choices from others, the deviates received an average of only 2.00 such choices. The deviates were relative isolates. It is clear that this isolation was not wholly voluntary on the part of the deviates, since they gave only slightly fewer choices than the conformers.

It is possible to examine the situation of the deviate more closely if we restrict ourselves to the six full size courts in Westgate. Ten of the houses in these six courts faced onto the street rather than into the courtyard area, so that the people living in these houses had fewer contacts with others in the court. Of the other 68 people living in these courts only 31% were deviates, while 7 of the 10 corner house residents were deviates. It appears that the isolated geographical position in which these 10 found themselves, and the resultant lack of contact between them and the rest of the court, made it difficult for the court to exert influence on them. The lack of contact suggests that mainly chance factors would determine whether they would show the pattern of attitude and behavior that had become the standard in the court.

Table 16.6 shows the "in-court" choices for these six full size courts with the corner house deviates separated from the others. The lack of contact between the court and the deviates in these corner houses is readily apparent. They both gave and received only about one third as many

<sup>2</sup> Significant at the 2% level of confidence.

choices as did the others in the court.<sup>3</sup> It is not surprising that they had remained uninfluenced by the group standard in their particular court.

TABLE 16.6

AVERAGE NUMBER OF "IN-COURT" CHOICES OF DEVIATES AND CONFORMERS FOR THE SIX LARGE COURTS IN WESTGATE

	<i>N</i>	Choices Given	Choices Received
Deviates in Corner houses	7	.57	.43
Deviates in Inner houses	23	1.52	1.39
Conformers	48	1.52	1.60

The other deviates in the court did not suffer from such lack of contact. They gave as many choices to the others in the court as did the conformers. As was true for all the deviates in Westgate, however, they tended to receive fewer than they gave, while the conformers tended to receive more choices than they gave.<sup>4</sup>

TABLE 16.7

AVERAGE NUMBER OF "OUT-COURT" CHOICES OF DEVIATES AND CONFORMERS FOR THE SIX LARGE WESTGATE COURTS

	<i>N</i>	Choices Given	Choices Received
Deviates in Corner houses	7	1.29	1.14
Deviates in Inner houses	23	1.13	.87
Conformers	48	1.17	1.58

Table 16.7, again, shows that these inner-house deviates were not members of groups other than the court group. They gave only as many choices to people outside their own court as did the conformers and, again, received many fewer.

The deviates stood out as relative isolates, not only within their own court, but in Westgate as a whole. The corner-house deviates received, from all sources, an average of only 1.57 choices, the other deviates received an average of 2.26 choices, while the conformers received an average of 3.18 choices. The conformers were more closely involved with the social life in Westgate than were the deviates. Whether relative isolation brings

<sup>3</sup> For all comparisons this is significant, at least at the 5% level of confidence.

<sup>4</sup> Not statistically significant.

about deviate status (as seems to be the case for those living in corner houses), or whether deviate status tends to bring about isolation through "rejection by others" (as might be the case with the deviates living in inner houses), the two things seem to go hand in hand.

### The Deviate in Westgate West

We concluded above that there was no relation in Westgate West between the uniformity of behavior within a building and the cohesiveness of the building, and that group standards were not operating in Westgate West. The opinions of the people about the tenants' organization and their degree of activity in it would, consequently, not be determined by pressures or influences from the group. The behavior of the individual would be more a matter of individual reaction and influence from other individuals than of group pressures.

We may well examine the sociometric status of those people who were different from the majority in their building, although we should not expect the isolation which we found among the deviates in Westgate. These people were deviates only in the sense that they reacted differently from most of the residents, and not in the sense of having successfully resisted group pressures to conform.

Few people in Westgate West expressed unfavorable attitudes toward the organization. Consequently, few people differed from the pattern of their building on the attitude dimension. The great majority of the deviates differed only on the activity dimension from the others in their building. Thirteen of the seventeen buildings had "favorable-active" patterns, and most of the deviates were people who felt favorably inclined, but had merely not attended the meetings of their building. It is plausible to expect, then, that we would find these deviates not to be isolates in the community despite their absence from building meetings. The data corroborate these expectations. Altogether, deviates and conformers both gave an average of about two and one half choices, and both received an average of about two and one half choices. We may thus conclude that in the absence of strong group formation, and in the absence of group standards, being different from the people in the group did not result in isolation.

### Summary

In order to conclude that observed uniformity in behavior of a number of individuals is the result of the operation of group standards or the existence of "social norms," we must be able to show the existence of psychological groups which are enforcing such standards. A collection of individuals with a relatively high number of sociometric linkages among

them may constitute such a psychological group, or may merely constitute a series of friendship relationships with no real unification of the group as a whole. It is highly likely, of course, that such a series of friendship relationships among a number of people will in time make for the development of a cohesive group. In Westgate West, where there had not been time for this process really to develop, evidence indicating the absence of group standards was found.

When a cohesive group does exist, and when its realm of concern extends over the area of behavior in which we have discovered uniformity among the members of the group, then the degree of uniformity must be related to the degree of cohesiveness of the group, if a group standard is operative. The more cohesive the group, the more effectively it can influence its members. Thus we have found that in the more cohesive groups in Westgate there were fewer deviates from the group pattern of behavior. The cohesiveness of the court group as a whole was the important determinant of the number of deviates. Subgroup formation within the larger group, no matter how cohesive these subgroups may have been, tended to disrupt the cohesiveness of the larger unit.

Although, on the basis of the data available to us, we have not been able to separate clearly the different means by which people can resist group influences and thus become deviates, there is abundant evidence that the attractiveness of the group and the amount of communication between the member and the group are major determinants. It also would seem likely that these two factors would generally not occur separately, but would operate together in most situations. The sociometric status of the deviate is clearly different from that of the conformer—isolation seems to be both a cause and an effect of being a deviate.

#### REFERENCES

1. Lewin, K. *et al.* Level of aspiration. In J. McV. Hunt (Ed.), *Personality and the behavior disorders*. Vol. I, New York: Ronald, 1944.
2. Newcomb, T. *Personality and social change*. New York: Dryden Press, 1913.
3. Sherif, M. *The psychology of social norms*. New York: Harper, 1936.



## Deviation, Rejection, and Communication

Stanley Schachter

The present study is concerned with the consequences of deviation from a group standard. Its immediate background is a study by Festinger, Schachter, and Back (3) of the relationships between group structure and group standards. Findings pertinent to the present study will be briefly reviewed.

1. Within each social group in a housing community there was homogeneity of attitude toward a community-wide problem. Among these groups, however, there was marked heterogeneity of attitude.

2. There was a high positive correlation between cohesiveness of the social group (measured by per cent of in-group sociometric choices) and strength of the group standard (measured by per cent of conformers to the standard).

3. Within a social group, deviates from the group standard received far fewer sociometric choices than did conformers.

The theory developed to explain these findings is as follows: Within any social group, pressures operate toward uniformity of attitude. The origins of such pressures are at least twofold: social reality and group locomotion.

*Social reality.* On any issue for which there is no empirical referent, the reality of one's own opinion is established by the fact that other people hold similar opinions. Forces exist to establish uniformity and thus to create "reality" for the opinion.

*Group locomotion.* Uniformity may be necessary or desirable for the group to locomote toward its goal. Locomotion will be facilitated if all members agree on a particular path to the goal.

The strength of the pressures toward uniformity that a group can exercise on its members will vary with the *cohesiveness* of the group and the *relevance* of the issue to the group. *Cohesiveness* is defined as the total field of forces acting on members to remain in the group. Stemming from

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cohesiveness is the property called the *internal power of the group*, which is defined as the magnitude of change the group can induce on its members. The degree of internal power will be equal to the magnitude of the force on the member to remain in the group. If we assume that all groups are attempting to induce the same amount, we can derive that there will be fewer deviates from a group standard in highly cohesive groups than in less cohesive groups.

*Relevance* refers to the ordering, in terms of importance to the group, of the activities over which the internal power of the group extends. The conceptual dimension along which we can order particular activities as relevant or irrelevant to a particular group still remains unclear. There appear to be three possible bases for such ordering: the importance of the activity for group locomotion, the value which the group places upon the activity, and some hierarchy of needs common to group members in their roles as group members. Whatever the basis for ordering, we may anticipate that a group will exercise greater influence over relevant than over irrelevant activities.

It is assumed that there is a parallel between the process of induction and actual communication; that is, communication is the mechanism by which power is exerted. Therefore, one method by which deviation from a group standard may be maintained is to cut off the deviate from communication with the group. Lack of communication may result from little initial contact between the individual and the group or rejection from the group. In the latter case, if the magnitude of the change that the group attempts to induce is greater than the force on the individual to stay in the group, the deviate will want to leave the group, or the group will tend to push the deviate out of the group, or both.

The present study is specifically concerned with the rejection of a deviate by the group. It is probable that not all groups reject to the same degree, and that rejection is a consequence of deviation on only certain kinds of issues. To delineate more carefully some of the conditions affecting rejection, this experiment examines the effect of degrees of cohesiveness of the group, and relevance of the issue on the degree of rejection of a deviate. The effects of these variables on communication and induction within the groups are also studied.

## The Experiment

The experiment was conducted as the first meeting of a club. Four types of clubs were set up, each representing a different degree and combination of cohesiveness and relevance. In each club, paid participants deviated from and conformed to an experimentally created group standard. Discussion in each club was systematically observed. At the end of each meeting members were nominated for committees and sociometric questionnaires were filled out. These served as measures of rejection.

The four types of clubs set up were case-study, editorial, movie, and radio clubs. There was a total of 32 clubs, eight of each type. Each club had from five to seven members and three paid participants who were perceived as fellow club members. All of the subjects (\$s) in the clubs were male college students.

In a typical meeting, after preliminary introductions, each club member read a short version of the "Johnny Rocco" case (2), the life history of a juvenile delinquent, which ended as Johnny was awaiting sentence for a minor crime. The case was presented as that of a real person. The leader of the club, in all instances the experimenter, asked the members to discuss and decide the question, "What should be done with this kid?" The discussion was guided by a 7-point scale made up of alternative suggestions ordered along a love-punishment dimension. Point 1 presented the "all love" viewpoint, point 7 the "all-punishment" viewpoint. Between these extremes were graded variations of the two points of view.<sup>1</sup> This scale was used to point up the differences of opinion within the group. It was introduced to the club members as a convenient device for learning everyone's position and for channelizing discussion.

After reading the case, each club member announced the position on the scale that he had chosen. Then the three paid participants in each club announced their positions. One paid participant, the "deviate," chose a position of extreme deviation and maintained it throughout the discussion; the second, the "mode," chose and maintained the modal position of group opinion; and the third, the "slider," chose the position of extreme deviation but allowed himself to be gradually influenced, so that at the end of the discussion he was at the modal position.

The case was written sympathetically to ensure that the deviate paid participant would be a deviate. In all clubs almost all members chose positions on the scale emphasizing love and kindness (positions 2-4), and the deviate chose the position of extreme discipline (position 7).

The discussion, limited to 45 minutes, was largely a matter of thrashing out differences of opinion among club members. After 20 minutes the leader took a census to ensure that everyone was fully aware of everyone else's position. He took no part in the discussion except to answer the few questions directed to him. At the end of the discussion a final census was taken. Then the leader turned the discussion to the future of the club. At this time the committee nomination blanks and sociometric questionnaires were filled out.

After each meeting the \$s were told that this had been an experiment and not a club, and the purposes of the experiment and the various devices used were fully explained. The \$s were asked not to disclose the true nature of these "clubs." There was no indication that anyone gave away the experiment.

### *How the Variables, Cohesiveness and Relevance, Were Produced*

*Cohesiveness* has been defined as the total field of forces acting on members to remain in the group. The greater the valence of the group for its members, the greater the cohesiveness. Valence of the group derives from at least two sources: the attractiveness of the activities the group mediates and the attractiveness of the members of the group. In this experiment, two degrees of cohesiveness were produced by manipulating the attractiveness of the activities mediated by the groups.

<sup>1</sup>For example, point 3 read: "He should be sent into an environment where providing Johnny with warmth and affection will be emphasized slightly more than punishing him, but discipline and punishment will be frequent if his behavior warrants it." For purposes of brevity the revised case study and the complete love-punishment scale are omitted from this paper. Interested readers may obtain copies by writing to the author.

Subjects were recruited for club membership from economics classes at the University of Michigan. The case-study and editorial clubs were described to half of these classes. The case-study clubs were purportedly being set up at the request of a group of lawyers, judges, and social workers to advise on the treatment and disposition of delinquents, sex offenders, etc. The editorial clubs were supposedly being organized at the request of a new national magazine to advise on feature articles, format, policy, etc. Interested students filled out a blank indicating which club they were interested in joining, and checked two rating scales noting the extent of their interest in each club. These were 4-point scales: "not interested at all," "only mildly interested," "moderately interested," and "extremely interested."

The movie and radio clubs were described to the other half of these classes. The movie clubs were purportedly being set up for a local theatre. The club members were to see films and decide which ones the theatre could successfully program. Radio clubs were supposedly being formed to serve a similar market research function for a local radio station. Students indicated their interest in these two clubs in the manner described above.

The case-study and movie clubs were high cohesive groups, made up of students who had checked between "moderately interested" and "extremely interested" on the scales for these clubs. The editorial and radio clubs were low cohesive groups, made up of students who indicated high interest in joining the case-study or movie clubs and little or no interest in joining the editorial or radio clubs.<sup>2</sup> Students becoming members of clubs they were interested in joining made up the high cohesive groups. Those becoming members of clubs they were not interested in joining made up the low cohesive groups. In short, *cohesiveness* is defined here in terms of the valence of the activity.<sup>3</sup>

*Relevance* has been defined as an ordering of group activities along a dimension of "importance" to the group. Two degrees of relevance were produced experimentally. In one case, Ss were concerned with an activity corresponding to the purpose of the club. In the other case, Ss were concerned with an activity which had nothing to do with the purpose of the club.

Case-study and editorial clubs discussed a case study and a feature article, respectively. Movie and radio clubs discussed issues foreign to the purpose of the clubs; each began with an appropriate subject but was diverted to a side issue. The movie clubs saw a 15-minute film, and the radio clubs listened to a 15-minute recording. Then the leader introduced the observer as someone who had written up the "Johnny Rocco" case and wanted the help of the group to discuss what should be done with him. The group was assured that this had nothing to do with the club and would never happen again. With some enthusiasm from the paid participants, the group always agreed to discuss the case.

To make constant the time of interaction among Ss, radio and movie clubs were chosen as a setting for the irrelevant issue. The Ss were unable to interact while looking at a movie or listening to a recording. Therefore, their discussion time was the same as that of Ss discussing relevant issues.

<sup>2</sup> A subject did not know which of the two clubs he had come to until the meeting was under way.

<sup>3</sup> This may seem a rather restricted definition of cohesiveness. Back (1), however, has demonstrated that cohesiveness, no matter what its source, can be considered a unitary concept. Whether cohesiveness is based on friendship, the valence of the activity mediated by the group, or group prestige, the consequences of increasing cohesiveness are identical.



To compare data obtained in the four types of clubs, it was necessary that the content be constant. This was done by using the "Johnny Rocco" case and the love-punishment scale in all the clubs. In case study clubs, "Johnny Rocco" was the case for the day. In editorial clubs, "Johnny Rocco" was part of a feature article on juvenile delinquency. In movie and radio clubs, "Johnny Rocco" was the irrelevant issue. In all clubs the scale was the basis for discussing, "What should be done with the kid?"

In summary, there were four kinds of clubs, each reproducing a different combination of the experimental variables, as follows:

1. High cohesiveness-relevant issue (Hi Co Rel): Case-Study Club
2. Low cohesiveness-relevant issue (Lo Co Rel): Editorial Club
3. High cohesiveness-irrelevant issue (Hi Co Irrel): Movie Club
4. Low cohesiveness-irrelevant issue (Lo Co Irrel): Radio Club

In the procedure used there are two possible sources of selective error: (a) Possibly students interested in the case-study and editorial clubs were selectively different from those attracted to the movie and radio clubs. However, more than 80% of the students addressed asked to join one of the clubs. More than 90% of these expressed preferences for case study or movie clubs. (b) Students assigned to case-study and movie clubs rated editorial and radio clubs slightly more favorably than students assigned to editorial and radio clubs. Possibly students in case study and movie clubs were more attracted to the idea of a club, any kind of club. This factor, however, probably had little effect on experimental results. In the degree of rejection of the deviate, no difference was found in high cohesive groups between students who rated the nonpreferred activity high and those who rated it low.

### *The Validity of the Manipulation of Cohesiveness*

The manipulation of cohesiveness began with the canvassing for Ss and their assignment to clubs on the basis of preliminary interest ratings. This method of assignment is summarized in Table 17.1, where figures were obtained by assign-

TABLE 17.1  
MEAN RATINGS ON SIGN-UP SHEETS

Group	Case-Study	Editorial
Hi Co Rel	3.27	2.20
Lo Co Rel	3.33	1.71
	Movie	Radio
Hi Co Irrel	3.53	2.24
Lo Co Irrel	3.34	1.59

ing numerical values to the four points of the rating scale. "Not interested at all" has the value 1; "extremely interested" has the value 4; and the two intermediate points, the values 2 and 3. The figures are the mean ratings of each club made by all Ss assigned to a particular experimental condition. There is a marked difference between Ss in high and low cohesive groups in their ratings of the clubs to which they were assigned. In the low cohesive conditions, all but two Ss rated the clubs in which they were placed between "not interested at all"

and "only mildly interested." In the high cohesive conditions, all but two *Ss* rated the clubs in which they were placed between "extremely interested" and "moderately interested."

How successful was this method in manipulating cohesiveness? At the end of each meeting, each *S* filled out a cohesiveness questionnaire designed to determine his intentions toward the club. There were three questions:

1. Do you want to remain a member of this group?
2. How often do you think this group should meet?
3. If enough members decide not to stay so that it seems this group might discontinue, would you like the chance to persuade others to stay?

Table 17.2 summarizes the data from this questionnaire and shows marked differences between high and low cohesive groups. In high cohesive groups 101 of the 102 *Ss* wanted to continue their memberships; in low cohesive groups only

TABLE 17.2

BREAKDOWN OF ANSWERS TO THE COHESIVENESS QUESTIONNAIRE

GROUP	N	QUESTION 1 WANT TO REMAIN MEMBER?		QUESTION 2 FREQUENCY OF MEETINGS?		QUESTION 3 WANT TO INDUCE OTHERS TO STAY IN CLUB?	
		Yes	No	Once or Twice a Week	Once Every 2, 3, or 4 Weeks	Yes	No
Hi Co Rel	53	98%	2%	61%	39%	73%	19%
Lo Co Rel	50	68	32	54	46	51	34
Hi Co Irrel	49	100	0	73	27	61	35
Lo Co Irrel	46	61	39	36	64	21	71

62 of 96 *Ss* wanted to do so. There are differences, too, between *Ss* in the two conditions who wanted to remain in their clubs. Such *Ss* in low cohesive groups wanted to meet less often and were less willing to persuade others to stay in the club than were *Ss* in high cohesive groups. The manipulation was clearly successful in producing groups with different degrees of cohesiveness.

### *The Paid Participants*

The three paid participants in each group were perceived as fellow club members. Like the *Ss*, they were male undergraduates. In each meeting, in each condition, they played three roles, deviate, mode, and slider. The deviate adopted the position of extreme discipline and maintained it throughout the discussion. The mode championed that position which the modal number of members supported. If during the meeting the modal position shifted, he shifted. The slider began as an extreme deviate (position 7) and during the meeting moved step by step to the modal position.

The mode and slider roles were controls. The deviate and the mode provided evidence of the effect of deviation as contrasted to conformity. Comparison of the slider and the deviate tested whether rejection was a result of having at one time, but no longer, championed a deviate position, or of simply maintaining deviancy against all attempted influence.

The three roles were systematically rotated among four paid participants so that each played each role twice in each experimental condition. To assure constancy

from meeting to meeting, rules of behavior guiding the paid participants in any role were carefully defined: (a) Each paid participant had to speak once every five minutes. If during any five-minute interval no one addressed a remark to him, he initiated a communication. (b) Where possible, all communications made by the paid participants, whether initiated or in response to someone, were rephrasings of the position he was maintaining at the time. (c) When it was impossible simply to rephrase the position, the paid participants at the deviate position were permitted two standard arguments:

1. Despite the fact that Johnny was shown love and affection, he went back to stealing.

2. It could not be said that discipline would not work, since it had not consistently been applied to Johnny.

### *Measures of Rejection*

After the discussion the leader introduced the subject of the club's future and proposed a plan by which a functioning group could be organized. To expedite such organization, each member filled out three mimeographed sheets: a committee nomination blank, a sociometric test, and the cohesiveness questionnaire described earlier.

*Committee nominations.* Three committees were set up, differing with respect to interest of the work, importance of the assigned functions, and delegated responsibility for club activities. They were called the Executive, Steering, and Correspondence Committees. In each club, the job of each committee was defined in much the same way, but with slightly different content. The Executive Committee was to decide what the group should discuss, to act as liaison agent between the club and its sponsoring agency, and to determine club policy. The Steering Committee was to prepare and present discussion materials and determine discussion procedure. The Correspondence Committee was to perform secretarial functions.<sup>4</sup>

The Ss were instructed to nominate persons whom they considered most capable of handling the work of each committee. They were not to nominate themselves or the same person for more than one committee. The number of members on each committee was manipulated so that no matter what number were present in any particular group, everyone had to nominate everyone else present for some committee. When 10 people were present, each member nominated three people for each committee; when nine people were present, only two people were nominated for the Correspondence Committee; and, when eight people were present, two people were nominated for the Steering Committee and two for the Correspondence Committee. The importance or unimportance of the committees to which the paid participants were nominated serves as an index of acceptance or rejection.

*The sociometric test.* Subjects were informed that it might become necessary to reduce the number of club members or to break up the group and portion out its members to one of the other clubs, and that therefore it would be helpful to know which people would like to remain together. They were asked to rank everyone present in order of preference for remaining in the same group with

<sup>4</sup> To check on whether or not jobs on these committees actually did vary in attractiveness, in several of the groups the members were asked to write their own names next to those committees in which they were most interested. Most requested the Executive Committee, a few the Steering, and none the Correspondence Committee.

themselves. In contrast to committee nomination instructions, the emphasis here was on congeniality. These data provide a sociometric index of rejection.

### ***The Observation Schedule***

An observer, introduced as a friend interested in what the club was doing and who could be imposed upon to take notes, recorded the following aspects of the group process: (a) who spoke to whom; (b) the length, in time, of the communication; (c) whether the speaker attacked or supported the position of the person to whom he spoke; (d) whether a communication, even if not addressed to a person at a specific position, implied approval or disapproval of this position; and (e) whether the speaker talked about experiences from his own or his friends' personal histories.

### ***Rationale***

The setup described, while constituting a reasonably well controlled experimental situation, represented for the Ss a real life situation. What was for the experimenter a method of manipulating a variable was for S a club he was interested in joining. The measuring instruments were conventional methods of electing officers, and so on. In short, the experiment was fitted within a social framework completely consistent with the idea and operation of a club, with no sacrifice of experimental control. The rationale for this procedure was the assumption that it would be possible to reproduce the variables and phenomena under study with greater intensity in a purportedly "real life situation" than in a laboratory setup that was identified as such. It is possible to produce complex social phenomena in laboratory experiments. Which procedure is more "effective" in the study of particular social phenomena can only be determined by additional investigation.

## **The Theoretical Relationships among Cohesiveness, Relevance, and Rejection**

The theory presented in the introduction can now be expanded to make specific derivations as to the degree of rejection anticipated in each experimental condition. The theory states that there are pressures toward uniformity of behavior and attitude among members of most social groups. If differences of opinion exist within a group, forces will arise on the members to restore uniformity. A number of corrective tendencies will develop: for example, pressures develop to change the opinions of members of the group holding opinions different from one's own; pressures arise to change one's own opinion to coincide more closely with those of other group members; a tendency develops to decrease one's dependence on deviant members as appropriate reference points in establishing the reality of one's own opinion. In any group where differences of opinion exist probably all of these tendencies exist and are, we shall say, simultaneously a function of the total pressures toward uniformity. In the



present experimental situation where almost all group members were of similar opinions and there was only one deviate, it seems reasonable to suggest that the predominant tendencies acting on them were the pressures to change the opinion of the deviate, and the tendency to decrease dependence on the deviate as a point of reference for establishing social reality.

A. *Pressures to change (Pch)* refer to the magnitude of pressures acting on group members to change a deviant opinion to conform more closely with their own. We make these assumptions about the relationship of Pch with the variables cohesiveness, relevance, and state of opinion:

1. *With increasing difference of opinion the magnitude of Pch should increase.*

If uniformity exists, Pch should have zero magnitude. As group opinion departs more and more from uniformity, Pch should correspondingly increase.

2. *With increasing cohesiveness, the magnitude of Pch should increase. At any point along a scale of difference of opinion, Pch should be greater for high than for low cohesive groups.*

Pressures to uniformity arise in part from a need for social reality within an appropriate reference group. A cohesive group, in which membership is valued, can be considered a more important reference group than a low cohesive group in which membership is not particularly cherished. Therefore, we can anticipate that pressures to uniformity will be greater in high than in low cohesive groups.

3. *With increasing relevance of issue, the magnitude of Pch should increase.*

Any set of activities can be ordered along some dimension of "importance" (relevance) for a particular reference group. It is plausible to assume that for activities which are of importance to the group, greater pressures to change will exist than for activities which are unimportant.

B. *Dependence (Dep)* refers to the extent to which members of a group rely on one another as reference points in establishing social reality. We make these assumptions about the relationships of dependence with the variables cohesiveness, relevance, and state of opinion:

1. *With increasing difference of opinion the magnitude of Dep will decrease.*

If opinions are identical, dependence will be high. When persons have different opinions, it is unlikely that they will depend on one another to establish the reality of their opinions.

2. *With increasing cohesiveness, the magnitude of Dep will increase.*

Members of a high cohesive group (a valued and important reference group) will be more dependent on one another than will members of a low cohesive group.

3. *With relatively small differences of opinion, the magnitude of Dep will increase with increasing relevance of issue. As difference of opinion increases, Dep for relevant issues decreases more rapidly than Dep for irrelevant issues, and a point of zero Dep will be reached with less difference of opinion for relevant than for irrelevant issues.*

The more "important" an issue to a particular group, the greater the extent to which group members depend on one another for social reality. On relevant issues, it will be more important that the reference group which establishes social reality have similar opinions than on less relevant issues. Therefore, dependence should decrease more rapidly with increasing perceived difference, and should reach the point of zero dependence earlier for highly relevant issues than for irrelevant issues.

These relationships are presented graphically in Figure 17.1. The rising Pch curves and falling Dep curves with increasing difference of opinion express assumptions A1 and B1, above. The greater magnitude of high cohesive than of low cohesive curves (relevance held constant), and of

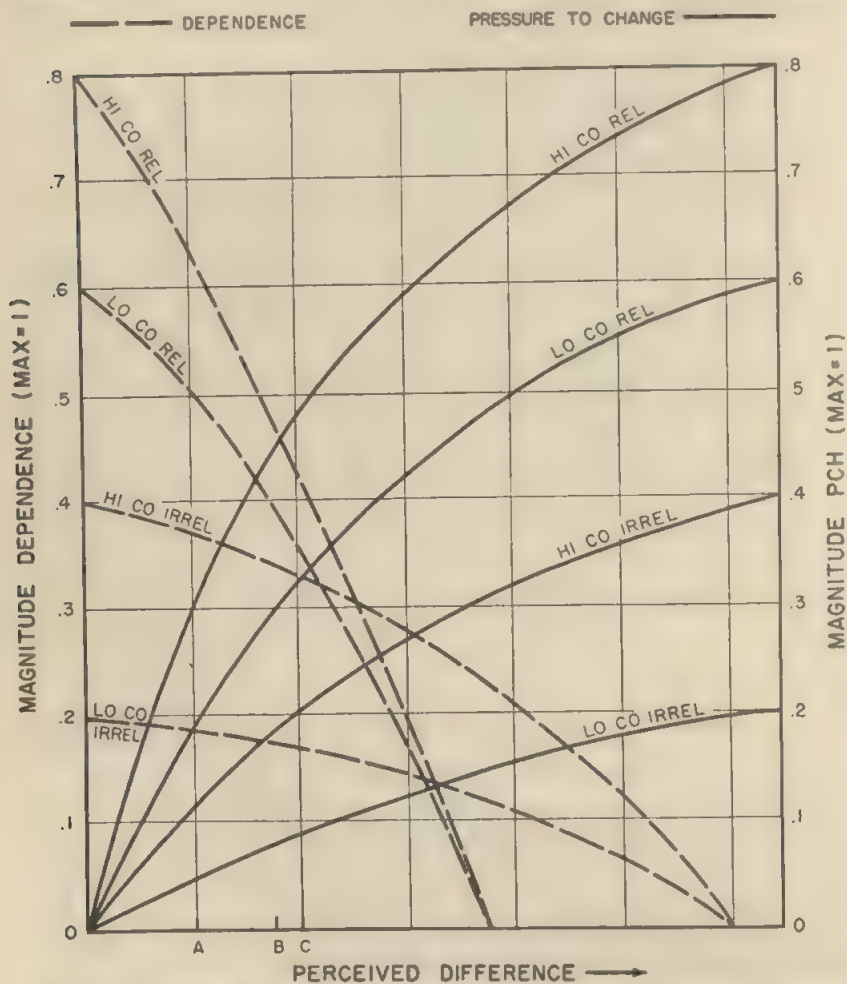


FIG. 17.1. Theoretical curves of the relationships between dependence, pressures to change, and cohesiveness, relevance, and perceived difference of opinion.

relevant than of irrelevant Pch curves (cohesiveness held constant), expresses assumptions A2, A3, and B2. At low levels of perceived difference with cohesiveness held constant, the magnitude of relevant Dep curves is greater than that of irrelevant Dep curves. Curves for relevant conditions drop at a faster rate and reach the point of zero dependence with far less

perceived difference than do curves for irrelevant conditions. This is an expression of assumption B3.

For each condition, the maxima of the Pch and Dep curves are of the same magnitude. We assume that the maxima of both factors are similarly a function of total pressures to uniformity. The scale of magnitude along the ordinate of this graph has maximum = 1. The values assigned are, of course, arbitrary and purely illustrative.

From these curves we can make predictions concerning the interrelationships among cohesiveness, relevance, and degree of rejection.

We shall coordinate rejection to the amount of pressures to change that do not find public expression. The amount of pressures that do find public expression we call *communication*. Dependence defines the proportion of pressures to change that can be expressed. Multiplying these two factors, therefore, gives the amount of pressures that will actually be exerted.<sup>5</sup>

$$\text{Comm} = \text{Pch} \times \text{Dep}$$

*Rejection*, then, which is defined as the amount of pressures not exerted, is computed by multiplying Pch by the quantity  $(1 - \text{Dep})$ .

$$\text{Rej} = \text{Pch} \times (1 - \text{Dep})$$

The number 1 represents maximum dependence, the point at which all Pch will be communicated. The greater the pressures and the smaller the dependence, the greater the rejection. In effect, this formula suggests that rejection requires relatively little dependence on a person and, at the same time, relatively high pressures to change him. If pressures to change are high but dependence is high, rejection will be relatively slight. If dependence is low but there are no pressures to change, rejection will not occur.

Applying this formula to the postulated curves in Figure 17.1, we find these relationships. At point A in this figure:

$$\begin{array}{lcl} & \text{Pch} \times (1 - \text{Dep}) = \text{Rej} \\ \text{Hi Co Rel} & .300 \times (1 - .650) = & .105 \\ \text{Lo Co Rel} & .185 \times (1 - .513) = & .090 \\ \text{Hi Co Irrel} & .110 \times (1 - .375) = & .069 \\ \text{Lo Co Irrel} & .050 \times (1 - .185) = & .041 \end{array}$$

At point B where the perceived difference is somewhat greater:

$$\begin{array}{lcl} & \text{Pch} \times (1 - \text{Dep}) = \text{Rej} \\ \text{Hi Co Rel} & .437 \times (1 - .487) = & .224 \\ \text{Lo Co Rel} & .295 \times (1 - .409) = & .174 \\ \text{Hi Co Irrel} & .175 \times (1 - .341) = & .115 \\ \text{Lo Co Irrel} & .075 \times (1 - .175) = & .062 \end{array}$$

<sup>5</sup> This theory of communication will be developed and expanded in the following section.

These trends become clear: (a) As perceived difference increases, the degree of rejection in each of these conditions will increase. (b) At any point beyond zero, along the axis of perceived difference:

$$\begin{aligned} \text{Rej in Hi Co Rel} &> \text{Rej in Lo Co Rel} \\ \text{Rej in Hi Co Irrel} &> \text{Rej in Lo Co Irrel} \\ \text{Rej in Hi Co Rel} &> \text{Rej in Hi Co Irrel} \\ \text{Rej in Lo Co Rel} &> \text{Rej in Lo Co Irrel}^6 \end{aligned}$$

Thus, the set of assumptions determining the shapes of these curves leads to these experimental predictions:

1. Persons in the mode and slider roles (who at the end of a meeting are close to zero perceived difference) will be rejected less (if at all) than will persons in the deviate role.

2. From experimental condition to condition, the degree of rejection of persons in the deviate role will vary in the order noted in trend (b) above. With cohesiveness constant, rejection will be greater in relevant than in irrelevant groups. With relevance constant, rejection will be greater in high than in low cohesive groups.

## Results

The post-meeting nominations for committees and the sociometric rankings of all club members provide two indices of rejection, i.e., nominations to the less important committees and relatively low sociometric rankings.

### *Sociometric Rankings*

At the end of each meeting the members of each club ranked everyone in the order of his desirability as a fellow club member. The instructions emphasized congeniality and compatibility as the basis for ranking. The lower the ranking, the greater the rejection.

Table 17.3 presents mean sociometric rankings of each paid participant in each condition. Each figure in the table is the mean of the mean sociometric rankings in each group. The *N* for each figure is 8, the number of groups in each condition. Since the groups varied in size from eight to ten members, all rankings were corrected to equivalent scores by adopting the nine possible rankings in a group of ten people as a basic scale and correcting rankings in smaller groups to equivalent scores. The mean rank in every group is 5.

It is impossible to make an exact prediction about relative rejection between the Lo Co Rel and Hi Co Irrel conditions. Though the curves imply  $\text{Rej in Lo Co Rel} > \text{Rej in Hi Co Irrel}$ , this was done purely for illustrative simplicity. We have, of course, no way of determining the relative contributions of cohesiveness and relevance in a comparison of Lo Co Rel and Hi Co Irrel conditions.



These relationships emerge from Table 17.3: (a) In any condition, mean rankings of either mode or slider are considerably below mean rankings of the deviate. All mode-deviate differences are significant by a *t*-test at the 7% level of confidence or better. Clearly, a penalty of relative rejection is imposed on a deviate. (b) There are no significant differences in rankings of either the mode or slider when comparisons are made between conditions.<sup>7</sup> The variables of cohesiveness and relevance have no effects on group evaluation of individuals who are at, or who adopt, the group

TABLE 17.3

## MEAN SOCIOMETRIC RANKINGS OF THE PAID PARTICIPANTS

Group	Deviate	Mode	Slider
Hi Co Rel	6.44	4.65	5.02
Lo Co Rel	5.83	4.70	4.56
Hi Co Irrel	6.51	4.68	4.44
Lo Co Irrel	5.67	3.83	5.03

norms. (c) The deviate is rejected more strongly in high than in low cohesive groups. Between rankings in high and low cohesive groups, the *t* is significant at the 12% level for the difference between Hi Co Rel and Lo Co Rel, and at the 1% level for the difference between Hi Co Irrel and Lo Co Irrel.<sup>8</sup> As predicted, greater cohesiveness produces greater rejection.

There is, however, no immediate evidence that the variable, relevance, affects the degree of rejection. The mean sociometric rankings of the deviate in the relevant and irrelevant condition, with cohesiveness constant, are about the same. This may be attributed in part to the fact that the measurement is a relative one, indicating only an individual's relative preference for one person over another, with no indication of the absolute intensity of like or dislike. There is, however, some indication of the relative intensities of the ratings in each condition. Occasionally an individual refused to fill in the sociometric sheet, or simply put in numbers in sequence, explaining that he was unable to discriminate among the people present. Random ranking implies that there was no genuine basis on which to express preference. If, therefore, any one experimental condition has a significantly greater number of random rankings than do the others, it may be inferred that, in general, all rankings in this condition were made with less basis for expressing preference and imply less intensity of like or dislike than in a condition where random responses are rare. More than twice as many random rankings were made in

<sup>7</sup> The largest difference, that between the Hi Co Irrel and Lo Co Irrel conditions for the mode, is significant by *t*-test at only the 28% level.

<sup>8</sup> In all tests of significance mentioned in this section, the group rather than the individual was considered the unit.

irrelevant conditions as in relevant. Of all group members, 16% ranked randomly in the irrelevant conditions and 6.8% in the relevant conditions. This difference is significant by chi-square with 1 *d.f.* at the 2% level. There were no significant differences between Hi Co Rel and Lo Co Rel or between Hi Co Irrel and Lo Co Irrel. Though mean rankings are about the same for relevant and irrelevant conditions, random rankings of the deviate seem to imply less strong feelings of rejection in the irrelevant groups.

These sociometric data are in the directions predicted: (a) Paid participants in the mode and slider roles were not rejected; as deviates they were definitely rejected. (b) There is greater rejection of the deviate in high than in low cohesive groups. (c) Though sociometric rankings of the deviate are about the same for relevant and irrelevant conditions, random sociometric rankings indicate that the intensity of rejection in irrelevant conditions was less than in relevant conditions.

### *Assignment to Committees*

With instructions emphasizing competence for the job, the members of each club nominated people for membership on the Executive, Steering, and Correspondence Committees. Rejection is coordinated to assignment to the least desirable committee. The Executive was the most attractive committee and the Correspondence the least attractive.

Tables 17.4, 17.5, and 17.6 present the data on the assignment of paid participants in the mode, slider, and deviate roles to the three committees.

TABLE 17.4  
PERCENTAGE OF SUBJECTS ABOVE CHANCE ASSIGNING "MODE" TO  
COMMITTEES

Group	Executive	Steering	Correspondence
Hi Co Rel	-4.56	+6.76	-2.22
Lo Co Rel	-9.83	+20.15	-10.44
Hi Co Irrel	-0.08	+6.85	-6.93
Lo Co Irrel	+3.70	+3.70	-8.07

All figures in each table represent the percentage, above or below chance expectancy, of all persons in each condition who assigned the various roles to the different committees. In Table 17.4, the mode was nominated for the Executive Committee by 4.56% less than we would expect if nominations in the Hi Co Rel condition had been made on some randomly determined basis. Varying group sizes, affecting the probability of any one person being assigned to a particular committee, necessitated computation of chance expectancies.

The standard errors of all chance percentages are close to 6.20.<sup>a</sup> Any score greater than 10.23 is significant at the 10% level; greater than 12.09 is significant at the 5% level; and greater than 15.93 is significant at the 1% level. If the 5% level is accepted, Table 17.5 reveals no significant fluctuations from chance in assigning the slider to any one particular committee. Similarly, for the mode, in Table 17.4, we find only one score that departs significantly from chance, assignment of the mode to the Steering Committee in the Lo Co Rel condition. With the large number of scores obtained, this may be interpreted as a chance fluctuation. There is no indication of systematic rejection for the mode or slider roles.

TABLE 17.5

PERCENTAGE OF SUBJECTS ABOVE CHANCE ASSIGNING "SLIDER" TO COMMITTEES

Group	Executive	Steering	Correspondence
Hi Co Rel	+1.76	-5.93	+4.16
Lo Co Rel	+7.32	-7.86	+0.50
Hi Co Irrel	-4.97	+4.38	+0.39
Lo Co Irrel	+2.69	-3.52	+0.16

Table 17.6 for the deviate presents a completely different picture. In all conditions, except Lo Co Irrel, the deviate is overnominated for the Correspondence Committee and undernominated for the Executive Committee. Deviation results in assignment to a relatively peripheral position in the role structure of the group. Not only is the deviate considered relatively undesirable as a fellow club member, but also least capable of handling the important jobs in the club.

TABLE 17.6

PERCENTAGE OF SUBJECTS ABOVE CHANCE ASSIGNING "DEVIATE" TO COMMITTEES

Group	Executive	Steering	Correspondence
Hi Co Rel	-14.00	-8.34	+22.31
Lo Co Rel	-17.58	-7.81	+25.26
Hi Co Irrel	-16.41	+4.83	+11.44
Lo Co Irrel	+10.16	-9.40	-1.30

<sup>a</sup> This score was computed using  $\sqrt{\frac{pq}{n}}$ , the customary formula for computing the standard error of a percentage. Since the number of cases varied slightly from condition to condition, and  $p$  varied slightly with the number of people in each group, the standard error 6.20 is a convenient approximation. The obtained standard errors for each committee in each condition are all quite close to this figure.

The degree of rejection, however, is affected by the experimental variables. Rejection is greater in both relevant conditions than in the irrelevant conditions. A *t*-test with 30 *d.f.* yields significance at the 2% level of confidence for this difference. Differences between the degree of rejection in high cohesive groups and low cohesive groups, however, are less clear-cut. Although there is a difference between high and low cohesive irrelevant conditions significant by *t*-test at the 10% level, there is no difference between the two relevant conditions. This is clearly inconsistent with theoretical expectations. Possibly the committee assignment measure should also be considered a relative measure that gives no indication of intensity of feeling. It is plausible that though there is no difference between high and low cohesive relevant groups in the percentage of people assigning the deviate to the Correspondence Committee, the intensity of rejection is greater in high than in low cohesive groups. In contrast to the sociometric ranking, however, no individual had difficulty in making these judgments, and there is no evidence of random assignment to committees. This may possibly be attributed to the different natures of the measures. A judgment of fitness for a particular job is a fairly every day matter. Decisions about which people should be in or out of a group appear to be a more unusual sort of judgment to make.

Except for this single inconsistency, the data support the predictions. Neither the mode nor the slider was rejected. In all conditions except Lo Co Irrel, where we anticipated very little rejection, the deviate was overnominated for the Correspondence Committee. Rejection of the deviate was greater in the relevant than in the irrelevant conditions, and greater in the Hi Co Irrel than in the Lo Co Irrel condition.

### The Process of Communication

The previous section has treated the relationships between experimental manipulations and post-meeting measurements. This section relates the processes of induction and communication, as they occurred during the meetings, to the experimental variables, cohesiveness and relevance, and to the post-meeting measurements.

We shall consider communication, the process of one person talking to another, as the mechanism of induction, i.e., the means by which influence is exerted. There are, of course, other reasons why people communicate, but within the confines of this experiment and theory we shall largely limit ourselves to communication as influence.

From the theoretical elaboration of "pressures to uniformity," specific derivations may be made about certain aspects of the patterns of communication that occurred in these meetings. Let us first relate the constructs, Pch and Dep, to the occurrence of communication.



1. Pressures to change others mean pressures to influence others, which we will consider identical with pressures to communicate. Our earlier assumptions may, therefore, be extended to communication pressures. The pressures to communicate to a deviate will rise with increasing perceived difference, increasing cohesiveness, and increasing relevance.

2. Dependence refers to the extent to which a person relies on another person or group of persons to establish social reality. It defines the proportion of pressure to change that can actually find public expression. Actual communication, then, is a function of both Dep and Pch, with dependence modifying the proportion of pressures to change that will be expressed publicly. Actual communication is formulated as  $Comm = Pch \times Dep$ .

In Figure 17.2, the heavily dotted lines, constructed by making the proper multiplications at each point, represent the magnitude or frequency of actual communication that should be directed at positions with different degrees of perceived difference in the four experimental conditions.<sup>10</sup> This figure is the same as Figure 17.1, with the curves for predicted communication added.

Let us examine more closely the meaning of "perceived difference." It refers to the phenomenological difference between two people rather than to the absolute difference between two points on the love-punishment scale. Two people may be at position 4 on the scale and perceive the difference between themselves and someone at position 7 as of very different orders of magnitude. We shall postulate that in this experiment perceived differences increased with discussion. In all club meetings the question, "How much do we really differ?" was frequently discussed, and attempts were made to reduce the distance between points on the scale. The deviates, however, were specifically instructed to resist attempts to minimize differences between themselves and people at other positions. The assumption that perceived difference increases with discussion seems reasonable, therefore, in this situation.

Accepting this assumption, we may say that the dotted curve of communication in Figure 17.2 represents the actual pattern of communication during the course of the meeting. From these considerations a number of

<sup>10</sup> The coordination of rejection to the amount of pressures that are not publicly expressed can be demonstrated graphically in Figure 17.2. At any point along the axis of perceived difference, rejection is equal to the difference between the height of the appropriate derived curve of actual communication and the height of the corresponding curve for Pch.

This relationship is simply stated algebraically:

$$\begin{aligned} Rej &= Pch \times (1 - Dep) \\ &= Pch - Pch \times Dep \\ Comm &= Pch \times Dep \\ \therefore Rej &= Pch - Comm \end{aligned}$$

testable derivations may be made about the frequency and pattern of communication to each paid participant in each condition.

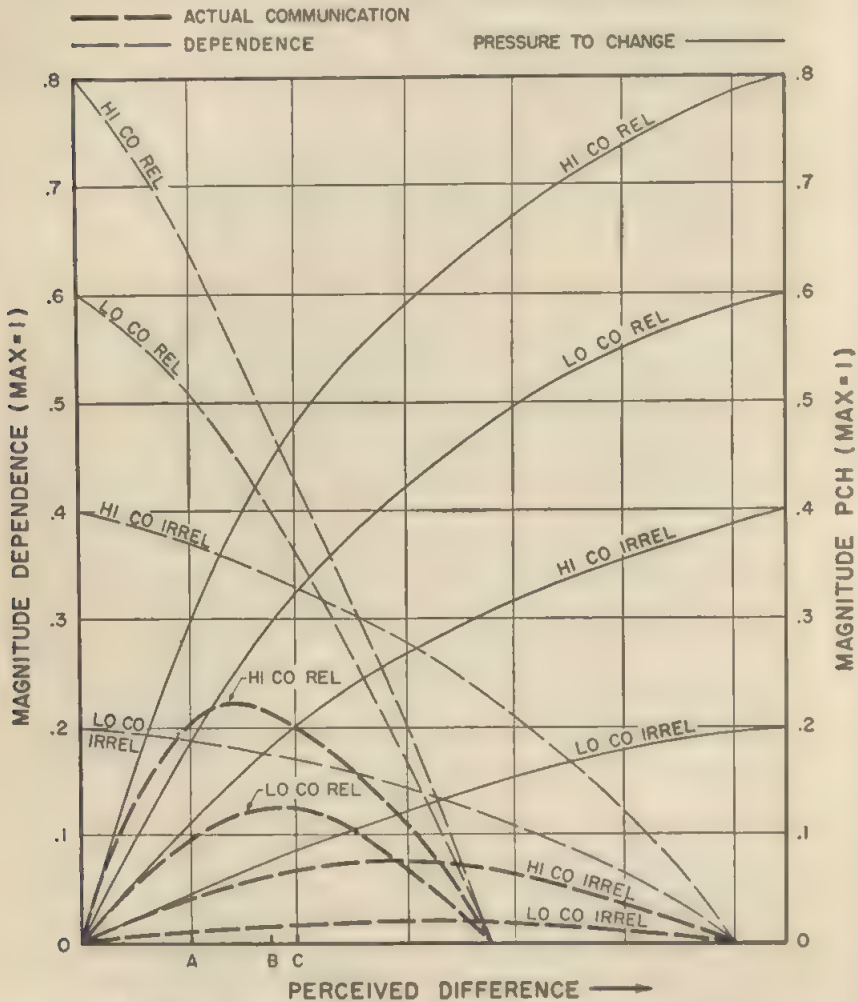


FIG. 17.2. Derived curves of actual communication in the four experimental conditions.

### Communication Patterns to the Deviate

A prediction previously developed was that rejection will increase with increasing perceived difference. Therefore, people who strongly reject the deviate perceive a greater difference between themselves and the deviate than do people who do not reject. In Figure 17.2, point C represents the

position of a rejector at the end of a meeting, point *B* the position of a mild rejector, and point *A* the position of a non-rejector. If perpendiculars are projected from these points, they intercept the communication curves at different relative positions.

If we accept the assumption that perceived difference increases with discussion time, and postulate that points *C*, *B*, and *A* in Figure 17.2 represent, respectively, the end-of-the-meeting perceptions of people who reject the deviate strongly, reject mildly, and do not reject, then we must say that the curves of actual communication up to points *C*, *B*, and *A* represent the patterns of communication from these three kinds of people to the deviate during the course of the meeting. In Figure 17.3 these predicted curves of communication, projected from Figure 17.2, are drawn for these three kinds of people for each experimental condition. These curves are specific predictions about the pattern and magnitude of communication to the deviate.

In Figure 17.3 the ordinate represents the amount of communication during the meeting, and the abscissa represents the flow of time from zero to 45 minutes. A point on these curves represents the amount of com-

TABLE 17.7

MEAN NUMBER OF COMMUNICATIONS ADDRESSED TO DEViate DURING THE COURSE OF THE MEETING BY SUBJECTS WITH DIFFERENT POST-MEETING REACTIONS TO HIM

GROUP	N	TIME INTERVAL IN MINUTES			
		5-15 *	15-25	25-35	35-45
Hi Co Rel					
Non-rejectors	13	1.15	0.92	2.15	1.54
Mild rejectors	15	0.40	1.27	1.87	0.86
Strong rejectors	25	0.68	1.60	1.52	0.76
Lo Co Rel					
Non-rejectors	13	0.38	0.54	0.84	0.46
Mild rejectors	22	0.58	0.50	1.23	1.73
Strong rejectors	15	0.26	0.47	1.27	2.99
Hi Co Irrel					
Non-rejectors	9	1.32	1.44	0.99	2.44
Mild rejectors	20	1.15	1.35	1.55	1.20
Strong rejectors	20	0.75	1.15	1.60	3.42
Lo Co Irrel					
Non-rejectors	16	1.69	1.69	2.34	2.12
Mild rejectors	15	1.47	0.94	2.20	3.74
Strong rejectors	15	1.20	0.74	2.47	2.87

\* Because the first few minutes of many meetings were concerned with technical problems and deciding just what was to be done, data from the 0-5 time interval are not reported.

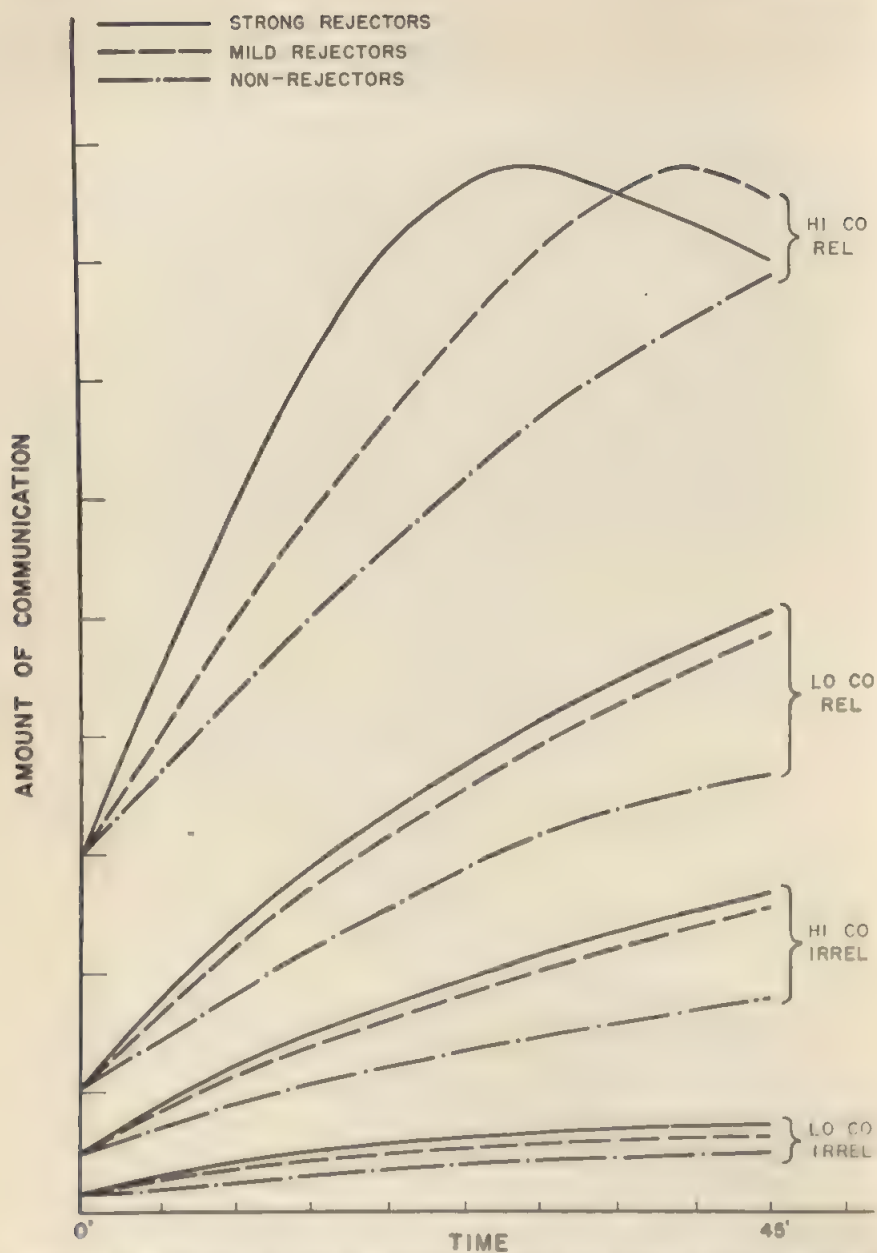


FIG. 17.3. Theoretical curves of communications from strong rejectors, mild rejectors, and non-rejectors to the deviate in the four experimental conditions.



munication that will be addressed to the deviate at a particular time in the course of the meeting by either the people who reject him strongly, reject mildly, or do not reject. All curves start slightly above the zero point, for it seems likely that even at the beginning of a meeting there is some perception of difference.

In the Hi Co Rel condition, the communication curve of non-rejectors increases continuously throughout the meeting. The curve of strong rejectors reaches a peak during the meeting and then declines continuously; and the mild rejectors' curve reaches a peak somewhat later and then declines. In all other conditions, all communication curves to the deviate rise continuously throughout the meeting.

The data testing these derivations are presented in Table 17.7. The meeting is here divided into 10-minute intervals and communications to the deviate during each interval tallied. The three categories of rejectors are determined by sociometric rankings of the deviate. Non-rejectors ranked the deviate from 1.0-3.72, mild rejectors from 4.0-7.92, and strong rejectors between 8 and 9. The figures in the table represent the total number of communications in each time interval made by all people in each rejector category, divided by the number of people in this category.

Let us examine first the data for the Hi Co Rel groups in Table 17.7. The strong rejectors reach their peak of communication to the deviate in the 15-25 minute interval and then decline steadily. The difference between the peak interval and the final time interval is significant at better than the 1% level.<sup>11</sup> Mild rejectors reach their peak somewhat later, in the 25-35 minute interval, and then decline. The difference between this peak and the final time interval is significant at the 3% level. Non-rejectors seem to reach a peak and then decline, but this difference is due entirely to one case and is significant at exactly the 50% level of confidence. The data, then, essentially parallel theoretical expectations.

In the other experimental conditions, the theory anticipates a steady rise in the number of communications addressed to the deviate by either mild, strong, or non-rejectors. The remaining data in Table 17.7 indicate that this is essentially correct. In six of these nine breakdowns, the number of communications to the deviate rises continuously, and differences between the last two time intervals are significant at the 12% level or better for all but the rising Lo Co Irrel curves. In three cases (non-rejectors in Lo Co Rel and Lo Co Irrel, mild rejectors in the Hi Co Irrel) there is a slight drop in the final interval. None of these drops is significant.

<sup>11</sup> All of the levels of significance reported with this set of data were obtained by tabulating for each individual in each category whether or not the number of communications he had addressed to the deviate was higher in one time interval than in the interval with which it was being compared. Probabilities were then computed by means of binomial expansion.

The theoretical derivations seem as well corroborated as can be anticipated with the relatively small number of cases involved. Most of the curves rise, and the only significant declines are the predicted ones.

### *Communication Patterns to the Mode and Slider*

The position of the mode on the scale of perceived difference in Figure 17.2 should be at zero, the point of no perceived difference between himself and most of the others in the group. At this point  $Pch = 0$ , and dependence is at a maximum. There should therefore be no communications to the mode during any meeting in any experimental condition. This conclusion, however, must be qualified by two considerations: (a) As a rule, most, but not all, of the members of any one club were at the modal position. There were slight differences, therefore, between the mode and a few members of the group. (b) A paid participant in the modal role was required to speak once every five minutes. Courtesy would probably demand an occasional response.

TABLE 17.8

MEAN NUMBER OF COMMUNICATIONS ADDRESSED TO THE MODE AND SLIDER DURING THE COURSE OF THE MEETING

GROUP	N	TIME INTERVAL IN MINUTES			
		5-15	15-25	25-35	35-45
Hi Co Rel					
Mode	53	0.13	0.06	0.06	0.10
Slider	53	0.53	0.55	0.21	0.17
Lo Co Rel					
Mode	50	0.06	0.10	0.14	0.22
Slider	50	0.30	0.20	0.20	0.20
Hi Co Irrel					
Mode	49	0.18	0.16	0.37	0.12
Slider	49	0.79	0.47	0.20	0.04
Lo Co Irrel					
Mode	46	0.14	0.15	0.13	0.45
Slider	46	0.72	0.63	0.41	0.30

We may anticipate, then, that the curve of communication to the mode in all experimental conditions should be a low straight line, parallel to the horizontal time axis. In Table 17.8, we see that this is the case. The figures in this table are computed on the same basis as those in the previous table. In all conditions only a very small number of communica-

tions were addressed to the mode at any time. Fluctuations from a straight line are all within the range of chance expectancy.

Theoretically, communications to the slider present a more complicated picture, for it is impossible to predict exactly the interaction between perceived difference and decreasing absolute difference. But it is reasonable to suggest that communications to the slider should be at about the same level as to the deviate until the slider makes his first shift, and then communications should gradually decrease until by the end of the meeting they are at about the same level for both the slider and the mode. The data presented in Table 17.8 essentially substantiate these expectations. About 15 minutes after the meeting started the slider shifted from position 7 to 5, and finally adopted the modal position between the 35- and 40-minute marks. In all experimental conditions, communications to the slider are at first considerably above the level of communication to the mode and then decline steadily to the level of the mode in the final time interval.<sup>12</sup>

### *The Frequency of Communication*

From the theoretical considerations previously formulated, additional derivations can be made about the magnitude or absolute amounts of communication in each experimental condition. It may be predicted, from the curves of communication in Figure 17.3, that the amount of communication to the deviate will decrease from Hi Co Rel condition to Lo Co Rel to Hi Co Irrel to Lo Co Irrel. And, since the distribution of positions on the love-punishment scale is the same from condition to condition, it may also be anticipated that the mean amounts of communication for meetings, within each condition, will vary in the same order. The data collected with the present observation schedule are, however, inadequate to substantiate or disprove these derivations. It has been postulated that the magnitude of pressures to uniformity is greater on relevant than on irrelevant issues, in high than in low cohesive groups. These derivations will hold *only* for communications that arise from pressures to uniformity, and we can say nothing about communications that arise from other sources. However, people communicate for numberless reasons beyond that of restoring uniformity of opinion. It seems a reasonable assumption that the more irrelevant an issue, the greater will be the number of communications that have sources other than pres-

<sup>12</sup> In the first time interval, though the number of communications to the slider is considerably higher than that to the mode, comparison with Table 17.7 reveals that the number of slider directed communications is consistently lower than that to the deviate. Probably this is an artifact of the slider role. In preparing to shift position, the slider probably tended to be somewhat less extreme and emphatic in his defense of position 7.

tures to uniformity. If this analysis of the differences between the discussions of relevant and irrelevant issues is correct, supporting evidence must be found in areas other than the directions and amounts of communication.

Differences between the communication process in relevant and irrelevant conditions are shown in Table 17.9. Communications in the relevant groups tended to be longer. Slightly more than 30% of all communications in the relevant groups were long communications (more than 30 seconds), and only 21% were long in the irrelevant condition.<sup>13</sup> In addition,

TABLE 17.9

INTERRUPTIONS, PAUSES, PERSONAL REFERENCES, AND LONG COMMUNICATIONS IN ALL CONDITIONS

	Hi Co Rel	Lo Co Rel	Hi Co Irrel	Lo Co Irrel
Per cent long communications	28	33	25	17
Mean interruptions per meeting	67.71	29.86	78.71	82.00
Total pauses	1	1	3	7
Personal history references	18	14	5	8

tion, discussion in these two conditions went at a different clip. There were far more interruptions in irrelevant than in relevant groups.<sup>14</sup> An interruption is defined as any attempt to break into a speech before it is completed. Oddly enough, in the face of the greater number of communications and the more rapid clip in irrelevant groups, there was a greater number of pauses in the discussions of the irrelevant groups. Though there was no systematic notation of pauses, the observer noted all particularly long, uncomfortable intervals when no one had anything to say. In short, there were marked differences in the character of discussion in the two conditions. Discussion in irrelevant groups might be characterized as cocktail party conversation—fast, brief, clipped, and in bursts; discussion in the relevant groups resembled the board meeting—slow, even-paced, long, and well considered.

Consistent with these characterizations of the process of the meeting are the additional data presented in Table 17.9 on the relative frequency of personal history references. Reference to personal history may be considered evidence of real involvement in the discussion. In relevant groups, there were more than two and a half times as many personal references

<sup>13</sup> This difference has a  $t = 2.06$ , which with 30 *d.f.* is significant at the 5% level.

<sup>14</sup> The difference between mean number of interruptions in relevant and irrelevant groups is significant at better than the .001 level of significance, with  $t = 5.74$  for 30 *d.f.* These measures of interruption and length of communication are relatively independent. Rank order correlations between the two are only +.39 in the irrelevant condition and +.45 in the relevant condition.



as there were in irrelevant groups.<sup>15</sup> Not only were the discussions of the irrelevant groups more glib, but also apparently more superficial.

The marked differences in the manner of relevant and irrelevant groups indicate that communications in irrelevant groups resulted in good part from sources other than pressures to uniformity. The data, therefore, do not serve as an adequate test of the derivations concerning the relative amounts of communication in the various conditions.

### Summary

A set of assumptions has been developed which defines the relationships of the constructs dependence and pressures to change, to cohesiveness, relevance, and state of opinion. Both communication and rejection have been coordinated to these constructs. Dependence defines the proportion of the pressures to change that can find public expression, and communication is defined as  $Comm = Pch \times Dep$ .

Rejection is coordinated to the amount of pressures to change which are not exerted and is defined as  $Rej = Pch \times (1 - Dep)$ .

These coordinations and the assumptions defining  $Pch$  and  $Dep$  allow us to make a number of predictions as to the results of the experiment. Predictions about rejection and the evidence supporting them will be reviewed briefly.

1. *Persons in the mode and slider roles will be rejected less (if at all) than will persons in the deviate role.*

On both the sociometric and committee assignment measures there was no evidence that either the mode or slider was rejected. The deviate, on the other hand, was rejected in all experimental conditions except Lo Co Irrel. Where the magnitudes of both  $Dep$  and  $Pch$  are low, we anticipate relatively little rejection. Thus, in the Lo Co Irrel condition, the sociometric ranking of the deviate was only slightly above the mean, and he was not overnominated for the correspondence committee.

2. *With cohesiveness held constant, rejection will be greater in relevant groups than in irrelevant groups.*

On the committee assignment measure, the deviate was assigned to the Correspondence Committee to a far greater extent in the relevant groups than in the irrelevant groups.

Though sociometric rankings of the deviate are about the same for the relevant and irrelevant conditions, there is evidence from random sociometric rankings that the intensity of rejection is greater in the relevant than in the irrelevant conditions.

3. *With relevance held constant, rejection will be greater in high cohesive than in low cohesive groups.*

<sup>15</sup> The difference yields a  $t$  of 1.89, which with 30 d.f. is significant at the 8% level.

The mean sociometric ranking of the deviate was considerably higher in both high cohesive conditions than in the corresponding low cohesive conditions.

On the committee assignment measure the deviate was nominated to the Correspondence Committee to a greater extent in the Hi Co Irrel than in the Lo Co Irrel condition. There is no difference, however, between the Hi Co Rel and the Lo Co Rel conditions. This inconsistency may be explained in terms of the relative nature of the measure. Here, too, the intensity of rejection may be stronger in Hi Co Rel than in Lo Co Rel groups. There is no immediate evidence, however, to support this argument.

Predictions about patterns of communication follow:

1. *In the Hi Co Rel condition, the amount of communication addressed to the deviate by non-rejectors should increase continuously throughout the meeting. Strong rejectors should reach a peak of communication during the meeting and then decline continuously, and mild rejectors should reach a peak somewhat later and then decline.*

2. *In all other experimental conditions, communications to the deviate from strong, mild, or non-rejectors should increase continuously throughout the meeting.*

3. *In all experimental conditions, there should be relatively few communications addressed to persons in the modal role, and no increase in communications during the meeting.*

4. *In all conditions, communications to the slider should decrease during the meeting as the slider shifts from a deviate to a modal position.*

The data essentially substantiated all of these predictions. The theory leads to other predictions about the relative magnitudes of communication in each experimental condition. These derivations, however, hold only for communications arising from pressures to uniformity. Since in irrelevant conditions many communications arose from other sources, it is impossible to test these derivations.

#### REFERENCES

1. Back, K. W. The exertion of influence through social communication. *Journal of Abnormal and Social Psychology*, 1951, 46, 9-23.
2. Evans, J. Johnny Rocco. *Journal of Abnormal and Social Psychology*, 1948, 43, 357-383.
3. Festinger, L., Schachter, S., & Back, K. *Social pressures in informal groups: A study of a housing community*. New York: Harper, 1950.

## The Significance of Multiple-Group Membership in Disaster

Lewis M. Killian

Although the importance of multiple-group membership as one of the salient features of modern social life is widely recognized by sociologists and psychologists, the task of exploring its many implications has only just been begun. Cooley, a pioneer in the study of the importance of group membership for the individual, recognized the existence of multiple-group memberships, describing the individual in modern society as a point through which numerous arcs, representing different group memberships, pass (1). Before him, William James declared that a man has "as many social selves . . . as there are distinct groups of persons about whose opinions he cares" (3).

In recent years other students have begun a more systematic exploration of the implications of identification with several different groups for the individual and for the society of which he is a part. The creation of psychological problems for the individual and the development of new strata in the social structure as the result of some types of multiple-group membership are discussed in the work of Robert E. Park (5), Everett Stonequist (9), and E. C. Hughes (2). Hughes has demonstrated that possession of contradictory roles in different groups may create "dilemmas and contradictions of status" for the individual.

Muzafer Sherif, in his elaboration of the concepts of "membership group" and "reference group," has furnished valuable conceptual tools for the analysis of multiple-group identifications and conflicting group loyalties (7, 122-125). He suggests, furthermore, that identification with numerous different reference groups and the lack of a unitary ego are the keys to the understanding of inconsistencies in certain types of behavior, such as intergroup relations (8).

In a study of the reactions of people in four Southwestern communities to physical disasters—explosions and tornadoes—made by the University

From *The American Journal of Sociology*, 1952, 57, 309-314. Reprinted by permission of the author and The University of Chicago Press.

of Oklahoma Research Institute, it was found that conflicting group loyalties and contradictory roles resulting from multiple-group membership were significant factors affecting individual behavior in critical situations. The dilemmas created by the disasters also brought to light latent contradictions in roles not ordinarily regarded as conflicting.

In spite of the fact that multiple-group memberships do create dilemmas and inconsistencies, the majority of people in modern urban society manage to function efficiently as members of many groups, often being only vaguely aware of contradictions in their various roles. Sherif points out that the individual is often not aware of the derivation of the "cross-pressures" which cause inconsistent behavior (8). Newcomb declares that many role prescriptions are "relatively nonconflicting" and says (4, 419).

Most of us, most of the time, manage to take quite different roles, as prescribed by the same or by different groups, without undue conflict. . . . Indeed, it is rather remarkable how many different roles most of us manage to take with a minimum of conflict.

He points out that many roles are "nonoverlapping." A man may play the role of a businessman, acting in terms of the work situation, during most of the day. For a few hours in the evening he may play the role of "the family man," leaving his work at the office. In a small community he may, on certain occasions, act as a functionary of the town government, as a volunteer fireman, or as a town councilman. Simultaneously, he has other group memberships which call for certain behavior—in a social class group, in a racial group, in the community of which he is a citizen, and in "society-at-large."

When catastrophe strikes a community, many individuals find that the latent conflict between ordinarily nonconflicting group loyalties suddenly becomes apparent, and that they are faced with the dilemma of making an immediate choice between various roles. In his classic study of the Halifax disaster, S. H. Prince noted this conflict when he wrote (6, 61),

But the earliest leadership that could be called social, arising from the public itself, was that on the part of those who had no family ties, much of the earliest work being done by visitors in the city. The others as a rule ran first to their homes to discover if their own families were in danger.

People who had been present in the explosion port of Texas City and in three Oklahoma tornado towns during disasters were asked, among other questions, "What was the first thing you thought of after the disaster struck?" and "What was the first thing you did?" Their answers revealed not only the conflict between loyalties to the family and to the community, described by Prince, but also dilemmas arising from conflicting roles derived from membership in other groups. The individuals concerned were not always conscious of the dilemmas or of the existence



of "cross-pressures," but even in such cases the choice of roles which the person made was significant in affecting the total pattern of group reaction to the disaster. In some cases subjects indicated that they recognized *after* the emergency that their reactions had been of critical social importance. On the basis of the experiences of people involved in these four community disasters, it is possible to suggest the types of groups between which dilemmas of loyalty may arise in modern communities. Tentative generalization as to how these dilemmas will be resolved and as to their significance for group reactions to disaster may also be formulated.

The choice required of the greatest number of individuals was the one between the family and other groups, principally the employment group or the community. Especially in Texas City, many men were at work away from their families when disaster struck and presented a threat to both "the plant" and "the home." In all the communities there were individuals, such as policemen, firemen, and public utilities workers, whose loved ones were threatened by the same disaster that demanded their services as trouble shooters. Even persons who had no such definite roles to play in time of catastrophe were confronted with the alternatives of seeing after only their own primary groups, or of assisting in the rescue and relief of any of the large number of injured persons, regardless of identity. Indeed, only the unattached person in the community was likely to be free of such a conflict.

How these conflicts between loyalty to the family group and loyalty to other membership groups, including the community and "society-at-large," were resolved was of great significance for the reorganization of communities for rescue, relief, and prevention of further disaster. In Texas City, at the time of the first ship explosion, many men were working in oil refineries, where failure to remain on the job until units were shut down could result in additional fires and explosions. In all the communities studied, failure of community functionaries, such as firemen and policemen, to perform the duties appropriate to their positions could result in the absence of expected and badly needed leadership in a disorganized group. This, in turn, could cause costly delay in the reorganization of the community for emergency rescue, traffic control, and fire-fighting activity. Preoccupation of large numbers of able survivors with their own small primary groups could result in the atomization of the community into small, uncoordinated groups, again delaying reorganization into a relatively well-integrated, unified, large group. As Prince indicated in his statement, quoted above, this would increase the dependence of the community on outside sources of leadership.

The great majority of persons interviewed who were involved in such dilemmas resolved them in favor of loyalty to the family or, in some cases, to friendship groups. Much of the initial confusion, disorder, and seem-

ingly complete disorganization reported in the disaster communities was the result of the rush of individuals to find and rejoin their families. Yet in none of the four communities studied did the disastrous consequences contemplated above seem to have materialized. In the first place, there were important exceptions to the tendency to react first in terms of the family. Most of the refinery workers in Texas City did stay on the job until their units were safely shut down, as they had been trained to do. The significance of conflicting group loyalties in a disaster situation is underlined, however, by the importance of the actions taken by a few exceptional individuals in each town who were not confronted with such conflicts. In Texas City the chief of police remained at his post from the moment of the first explosion until 72 hours later, never returning to his home during the entire period, and playing a vital part in the reorganization of the community. He ascribed his ability to give undivided attention to his official duties to the fact that he knew that his family was safely out of town, visiting relatives, at the time of the explosion. One member of the volunteer fire department of a tornado town told of the thin margin by which his community escaped a disastrous fire following the "twister":

I was at my home, right on the edge of where the storm passed, when it hit. Neither me nor my wife was hurt. The first thing I thought of was fires. I knew there'd be some, so I went to the fire station right away. On the way I could see that there was a fire right in the middle of the wreckage—a butane tank had caught fire. I got out of the truck, drove over there, and fought the fire by myself until the army got there to help me.

All the rest of the firemen had relatives that were hurt, and they stayed with them. Naturally they looked after them. If it hadn't been that my wife was all right, this town probably would have burned up. It's hard to say, but I kind of believe I would have been looking after my family, too.

Devotion to the family as the primary object of loyalty did not always redound to the detriment of aid to other groups, however. Many people who served as rescue workers, assisting injured people whom they did not even know, were drawn to the areas of heavy casualties because of concern for members of their own families whom they believed to be there. Apparently they found their identification with society-at-large, and the emphasis of American culture upon the importance of human life, too great to permit them to pass an injured stranger without assisting him. Hence, many stayed to assist in the common community task of rescuing the injured, in both Texas City and in the tornado towns. In one of the latter a man sensed the approach of the tornado only minutes before it struck. In spite of great personal danger he rushed through the storm to a theater where his children were attending a movie. There he prevented the frightened audience from pouring forth into the storm by holding the doors closed. Later he was acclaimed as a hero whose quick action had saved the lives of many of his fellow citizens. He himself denied that

he had any thought of taking the great risk that he took for the sake of the anonymous audience itself; he was thinking only of his own children.

A second, but less common, type of conflict was found in the case of people who were confronted with the alternatives of playing the "heroic" role of rescue worker and of carrying out what were essentially "occupational roles." In terms of group loyalty, they were impelled on the one hand to act as sympathetic, loyal members of society-at-large, and to give personal aid to injured human beings. On the other hand, they were called to do their duty as it was indicated by their membership in certain occupational groups.

One such person was a minister in Texas City who, upon hearing the explosion, started for the docks with the intention of helping in the rescue work. On the way he became conscious of the choice of roles which confronted him. He said,

After I heard the first explosion my first impulse was to go down to the docks and try to help there. But on the way down I saw two or three folks I knew who had husbands down there. I saw then that my job was with the families—not doing rescue work. I had a job that I was peculiarly suited for, prepared for, and I felt that I should do that.

More important for the reorganization of a tornado-stricken town was the choice made by a state patrolman between his role as a police officer and his role as friend and neighbor to the people of the community in which he was stationed. His story was:

As I drove around town after the tornado had passed, I realized that the best thing I could do was to try to make contact with the outside and get help from there. I started out to drive to the next town and try to call from there. As I drove out of town, people I knew well would call me by name and ask me to help them find their relatives. Driving by and not stopping to help those people who were looking to me as a friend was one of the hardest things I ever had to do.

As a result of this difficult decision, this man became the key figure in the development of organized rescue work, after he recruited and organized a large force of rescue workers in a near-by community.

A similar dilemma faced many public utilities workers who were forced to disregard the plight of the injured, if they were to perform their task of restoring normal community services. Unlike the minister and the patrolman, these workers reported no awareness of a conflict of roles, regarding it as a matter of course that they concentrated on their often quite dangerous jobs. Some indicated that preoccupation with the job was so intense that they were scarcely aware of what went on around them. Yet the instances of devotion to prosaic duty cited above were exceptional. Many policemen, firemen, and other functionaries acted heroically, but quite outside the framework and discipline of their organizations.

For people whose usual occupational roles bore little or no relationship

to the needs created by a disaster, identification with the community as a whole and disregard of their occupational roles came still more easily. Many merchants and clerks rushed from their stores to aid in rescue work, leaving both goods and cash on the counters. The postmaster in one tornado town left the post office completely unguarded, even though the windows were shattered and mail was strewn about the floor. This was, it is true, an extreme case of abandonment of the occupational role.

A third type of conflict of loyalties was that between the loyalty of employees to "the company" as an organization, and to fellow employees as friends and human beings. It might seem that the choice, essentially one between life and property, should have been an easy one; but the fact that different choices were made by men with different degrees of identification with other workers reveals that a basic conflict was present. In Texas City many plant officials were also residents of the community and friends of the workers. After the explosions, in which several top executives were killed, some men found themselves suddenly "promoted" to the position of being in charge of their company's damaged property. At the same time men with whom they had worked daily for several years were injured or missing. The most common, almost universal, reaction was to think of the men first and of the plant later. One plant official, active in rescue work in spite of a broken arm and numerous lacerations, described his reaction to the sudden, dramatic conflict between loyalty to the company and loyalty to the workers as follows:

Property! Nobody gave a damn for property! All that was important was life. I've often wondered just how it would be to walk off and let a plant burn up. That was the way it was. We didn't even consider fighting the fire.

In sharp contrast to this reaction, however, was that of a man in charge of a neighboring plant. While he was in Texas City at the time of the first blast, he had never lived in the community and scarcely knew his workers. He described his first reaction in the following words:

I got in my car and drove over to another refinery to find out what had happened. The assistant superintendent told me that their top men had been killed and asked me what I thought he should do. I told him, "You should take charge of the company's property. That's what the president of your company would tell you if he were here. You look after the property. I'm going over to Galveston to call our president, and I'll call yours at the same time."

While this reaction was exceptional, it is significant as suggesting an alternate way of resolving the conflict between loyalty to "the company" and "the men."

Finally, some individuals suddenly discovered, in the face of disaster, that there was a conflict between loyalty to the community and loyalty to certain extra-community groups. At the time of two of the disasters,



telephone workers in the Southwest were on strike. In both communities the striking workers were allowed to return to duty by union leaders, but were ordered to walk out again a few days later. In both cases the union officials considered the emergency to be over sooner than did the townspeople of the stricken communities. In one town the workers obeyed the union's orders only to find themselves subjected to harsh criticism by their fellow townsmen. In the other community the workers resigned from the union rather than forsake their loyalty to their other membership group. It was almost a year before union officials were able to reorganize the local in this town, and some workers never rejoined.

As was pointed out earlier, the individual may, under normal circumstances, carry out roles appropriate to membership in several groups without having to make a choice between basically conflicting group loyalties. He may even do so without seriously impairing his performance of any of his roles. The worker may wish that he could spend more time at home with his family, but resigns himself to the fact that he cannot if he is to keep the job he wants. On his way to work he may pass the scene of a fire and be vaguely conscious that, as a citizen, he is indirectly responsible for the protection of life and property; but he assumes that the limit of his direct responsibility for action extends only to notifying the fire department, if it is not already there. The employer may, within certain limits, think of the workers as persons and friends and still not be disloyal to the company's interests. In the crisis induced by disaster, however, these individuals may find that it is impossible to serve two masters, to act in two roles. An immediate choice is demanded, but it may be difficult because the demands of the competing groups may appear equally urgent. The nature of the choice made by the individual, particularly if one of his roles is associated with a key position in the community, may have important consequences for the reorganization of the community. Large-scale reorganization, coordination, and direction of efforts is necessary to speedy rescue work and the restoration of normalcy. Activities carried on in terms of the demands of many diverse, competing groups act as an impediment to this reorganization.

Further research is needed to make possible the prediction of the choices that will be made by individuals in these conflicts. The frequency with which individuals thought and acted first in terms of family and close friends suggests that loyalty to primary groups stands first in the hierarchy of group loyalties, as might be expected. On the other hand, important exceptions in which persons played relatively impersonal roles as leaders, or working with matériel rather than people, indicate that some factors, such as training or feelings of responsibility, may predispose the individual to adhere to secondary-group demands even in a disaster. Knowledge of what these factors are and how they may be induced would

contribute to greater understanding of group reactions to disorganization, and of methods of facilitating group reorganization.

#### REFERENCES

1. Cooley, C. H. *Human nature and the social order*. New York: Scribners, 1902.
2. Hughes, E. C. Dilemmas and contradiction of status. *American Journal of Sociology*, 1945, **50**, 353-359.
3. James, W. *Principles of psychology*. New York: Henry Holland, 1890.
4. Newcomb, T. M. *Social psychology*. New York: Dryden, 1950.
5. Park, R. E. Human migration and the marginal man. *American Journal of Sociology*, 1928, **33**, 881-893.
6. Prince, S. H. *Catastrophe and social change*. New York: Columbia Univ. Press, 1921.
7. Sherif, M. *An outline of social psychology*. New York: Harper, 1948.
8. Sherif, M. The problems of inconsistency in intergroup relations. *Journal of Social Issues*, 1949, **5**, 32-37.
9. Stonequist, E. *The marginal man*. New York: Scribners, 1937.

## Overcoming Resistance to Change

Lester Coch and John R. P. French, Jr.

It has always been characteristic of American industry to change products and methods of doing jobs as often as competitive conditions or engineering progress dictates. This makes frequent changes in an individual's work necessary. In addition, the markedly greater turnover and absenteeism of recent years result in unbalanced production lines, which again makes for frequent shifting of individuals from one job to another. One of the most serious production problems faced at the Harwood Manufacturing Corporation has been the resistance of production workers to the necessary changes in methods and jobs. This resistance expressed itself in several ways, such as grievances about the piece rates that went with the new methods, high turnover, very low efficiency, restriction of output, and marked aggression against management. Despite these undesirable effects, it was necessary that changes in methods and jobs continue.

Efforts were made to solve this serious problem by the use of a special monetary allowance for transfers, by trying to enlist the cooperation and aid of the union, by making necessary layoffs on the basis of efficiency, etc. In all cases, these actions did little or nothing to overcome the resistance to change. On the basis of these data, it was felt that the pressing problem of resistance to change demanded further research for its solution. From the point of view of factory management, there were two purposes to the research: (a) Why do people resist change so strongly? and (b) What can be done to overcome this resistance?

Starting with a series of observations about the behavior of changed groups, the first step in the program was to devise a preliminary theory to account for the resistance to change. Then, on the basis of the theory, a real-life action experiment was devised and conducted within the context of the factory situation. Finally, the results of the experiment were interpreted in the light of the preliminary theory and the new data.

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## Background

The main plant of the Harwood Manufacturing Corporation, where the present research was done, is located in the small town of Marion, Virginia. The plant produces pajamas and, like most sewing plants, employs mostly women. The plant's population is about 500 women and 100 men. The workers are recruited from the rural, mountainous areas surrounding the town, and are usually employed without previous industrial experience. The average age of the workers is 23. The average education is eight years of grammar school.

The policies of the company in regard to labor relations are liberal and progressive. A high value has been placed on fair and open dealing with the employees and they are encouraged to take up any problems or grievances with the management at any time. Every effort is made to help foremen find effective solutions to their problems in human relations, using conferences and role-playing methods. Carefully planned orientation, designed to help overcome the discouragement and frustrations attending entrance upon the new and unfamiliar situation, is used. Plant-wide votes are conducted where possible to resolve problems affecting the whole working population. The company has invested both time and money in employee services such as industrial music, health services, lunchroom, and recreation programs. In the same spirit, the management has been conscious of the importance of public relations in the local community; they have supported, both financially and otherwise, any activity which would build up good will for the company. As a result of these policies, the company has enjoyed good labor relations since the day it commenced operations.

Harwood employees work on an individual incentive system. Piece rates are set by time study and are expressed in terms of units. One unit is equal to one minute of standard work: 60 units per hour equal the standard efficiency rating. Thus, if on a particular operation the piece rate for one dozen is 10 units, the operator would have to produce six dozen per hour to achieve the standard efficiency rating of 60 units per hour. The skill required to reach 60 units per hour is great. On some jobs, an average trainee may take 34 weeks to reach the skill level necessary to perform at 60 units per hour. Her first few weeks of work may be on an efficiency level of 5 to 20 units per hour.

The amount of pay received is directly proportional to the weekly average efficiency rating achieved. Thus, an operator with an average efficiency rating of 75 units per hour (25% more than standard) would receive 25% more than base pay. However, there are two minimum wages below which no operator may fall. The first is the plant-wide minimum, the hiring-in wage; the second is a minimum wage based on six months'



employment and is 22% higher than the plant-wide minimum wage. Both minima are smaller than the base pay for 60 units per hour efficiency rating.

The rating of every piece worker is computed every day, and the results are published in a daily record of production which is shown to every operator. This daily record of production for each production line carries the names of all the operators on that line arranged in rank order of efficiency rating, with the highest rating girl at the top of the list. The supervisors speak to each operator each day about her unit ratings. Because of the above procedures, many operators do not claim credit for all the work done in a given day. Instead, they save a few of the piece rate tickets as a "cushion" against a rainy day when they may not feel well or may have a great amount of machine trouble.

When it is necessary to change an operator from one type of work to another, a transfer bonus is given. This bonus is so designed that the changed operator who relearns at an average rate will suffer no loss in earnings after change. Despite this allowance, the general attitudes toward job changes in the factory are markedly negative. Such expressions as, "When you make your units [standard production], they change your job," are all too frequent. Many operators refuse to change, preferring to quit.

### The Transfer Learning Curve

An analysis of the after-change relearning curves of several hundred experienced operators rating standard or better prior to change showed that 38% of the changed operators recovered to the standard unit rating of 60 units per hour. The other 62% either became chronically substandard operators or quit during the relearning period.

The average relearning curve for those who recover to standard production on the simplest type of job in the plant is eight weeks long, and, when smoothed, provides the basis for the transfer bonus. The bonus is the percentage difference between this expected efficiency rating and the standard of 60 units per hour.

The relearning period for an experienced operator is longer than the learning period for a new operator. This is true despite the fact that the majority of transfers—the failures who never recover to standard—are omitted from the curve. However, changed operators rarely complain of "wanting to do it the old way" after the first week or two of change, and time and motion studies show few false moves after the first week of change. From this evidence it is deduced that proactive inhibition, or the interference of previous habits in learning the new skill, is either nonexistent or very slight after the first two weeks of change.

An analysis of the relearning curves for 41 experienced operators who were changed to very difficult jobs gives a comparison between the recovery rates for operators making standard or better prior to change, and those below standard prior to change. Both classes of operators dropped to a little below 30 units per hour and recovered at a very slow but similar rate. These curves show a general (though by no means universal) phenomenon: the efficiency rating prior to change does not indicate a faster or slower recovery rate after change.

### A Preliminary Theory of Resistance to Change

The fact that relearning after transfer to a new job is so often slower than initial learning on first entering the factory would indicate, on the face of it, that the resistance to change and the slow relearning is primarily a motivational problem. The similar recovery rates of skilled and unskilled operators tend to confirm the hypothesis that skill is a minor factor and motivation is the major determinant of the rate of recovery. Earlier experiments at Harwood by Alex Bavelas demonstrated this point conclusively. He found that the use of group decision techniques on operators who had just been transferred resulted in very marked increases in the rate of relearning, even though no skill training was given and there were no other changes in working conditions (3).

Interviews with operators who have been transferred to a new job reveal a common pattern of feelings and attitudes which are distinctly different from those of successful nontransfers. In addition to resentment against the management for transferring them, the employees typically show feelings of frustration, loss of hope of ever regaining their former level of production and status in the factory, feelings of failure, and a very low level of aspiration. In this respect, these transferred operators are similar to the chronically slow workers studied previously.

Earlier unpublished research at Harwood has shown that the nontransferred employees generally have an explicit goal of reaching and maintaining an efficiency rating of 60 units per hour. A questionnaire administered to several groups of operators indicated that a large majority of them accept as their goal the management's quota of 60 units per hour. This standard of production is the level of aspiration according to which the operators measure their own success or failure, and those who fall below standard lose status in the eyes of their fellow employees. Relatively few operators set a goal appreciably above 60 units per hour.

The actual production records confirm the effectiveness of this goal of standard production. The distribution of the total population of operators in accordance with their production levels is by no means a normal curve. Instead there is a very large number of operators who rate 60 to 63

units per hour, and relatively few operators who rate just above or just below this range. Thus we may conclude that:

**Proposition 1.** There is a force acting on the operator in the direction of achieving a production level of 60 units per hour or more. It is assumed that the strength of this driving force (acting on an operator below standard) increases as she gets nearer the goal—a typical goal gradient.

On the other hand, restraining forces operate to hinder or prevent her reaching this goal. These restraining forces consist, among other things, of the difficulty of the job in relation to the operator's level of skill. Other things being equal, the faster an operator is sewing the more difficult it is to increase her speed by a given amount. Thus we may conclude that:

**Proposition 2.** The strength of the restraining force hindering higher production increases with increasing level of production.

In line with previous studies, it is assumed that the conflict of these two opposing forces—the driving force corresponding to the goal of reaching 60 and the restraining force of the difficulty of the job—produces frustration. In such a conflict situation, the strength of frustration will depend on the strength of these forces. If the restraining force against increasing production is weak, then the frustration will be weak. But if the driving force toward higher production, i.e., the motivation is weak, then the frustration will also be weak. Probably both of the conflicting forces must be above a certain minimum strength before any frustration is produced, for all goal-directed activity involves some degree of conflict of this type; yet a person is not usually frustrated so long as he is making satisfactory progress toward his goal. Consequently we assume that:

**Proposition 3.** The strength of frustration is a function of the weaker of these two opposing forces, provided that the weaker force is stronger than a certain minimum necessary to produce frustration (3).

From Propositions 1, 2, and 3, we may derive that the strength of frustration (a) should be greater for operators who are below standard in production than for operators who have already achieved the goal of standard production; (b) should be greater for operators on difficult jobs than for operators on easy jobs; and (c) should increase with increasing efficiency rating below standard production. Previous research would suggest:

**Proposition 4.** One consequence of frustration is escape from the field (2).

An analysis of the effects of such frustration in the factory showed that it resulted, among other things, in high turnover and absenteeism. The rate of turnover for successful operators with efficiency ratings above standard was much lower than for unsuccessful operators. Likewise, operators on the more difficult jobs quit more frequently than those on the easier jobs. Presumably the effect of being transferred is a severe

frustration which should result in similar attempts to escape from the field.

In line with this theory of frustration and the finding that job turnover is one resultant of frustration, an analysis was made of the turnover rate of transferred operators as compared with the rate among operators who had not been transferred recently. For the year September, 1946, to September, 1947, there were 198 operators who had not been transferred recently; that is, within the 34-week period allowed for relearning after transfer. There was a second group of 85 operators who had been transferred recently; that is, within the time allowed for relearning the new job. Each of these two groups was divided into seven classifications according to their unit rating at the time of quitting. For each classification the percentage turnover per month, based on the total number of employees in that classification, was computed.

The results are given in Figure 19.1. Both the levels of turnover and the form of the curves are strikingly different for the two groups. Among operators who have not been transferred recently the average turnover per month is about 41½%; among recent transfers the monthly turnover is nearly 12%. Consistent with the previous studies, both groups show a very marked drop in the turnover curve after an operator becomes a success by reaching 60 units per hour, or standard production. However, the form of the curves at lower unit ratings is markedly different for the two groups. The nontransferred operators show a gradually increasing rate of turnover up to a rating of 55 to 59 units per hour. The transferred operators, on the other hand, show a high peak at the lowest unit rating of 30 to 34 units per hour, decreasing sharply to a low point at 45 to 49 units per hour. Since most changed operators drop to a unit rating of around 30 units per hour when changed and then drop no further, it is obvious that the rate of turnover was highest for these operators just after they were changed and again much later just before they reached standard. Why?

It is assumed that the strength of frustration for an operator who has not been transferred gradually increases because both the driving force toward the goal of reaching 60 and the restraining force of the difficulty of the job increase with increasing unit rating. This is in line with Propositions 1, 2, and 3, above. For the transferred operator, on the other hand, the frustration is greatest immediately after transfer when the contrast of her present status with her former status is most evident. At this point, the strength of the restraining forces is at a maximum because the difficulty is unusually great due to proactive inhibition. Then, as she overcomes the interference effects between the two jobs and learns the new job, the difficulty and the frustration gradually decrease and the rate of turnover declines until the operator reaches 45-49 units per hour. Then



at higher levels of production the difficulty starts to increase again and the transferred operator shows the same peak in frustration and turnover at 55-59 units per hour.

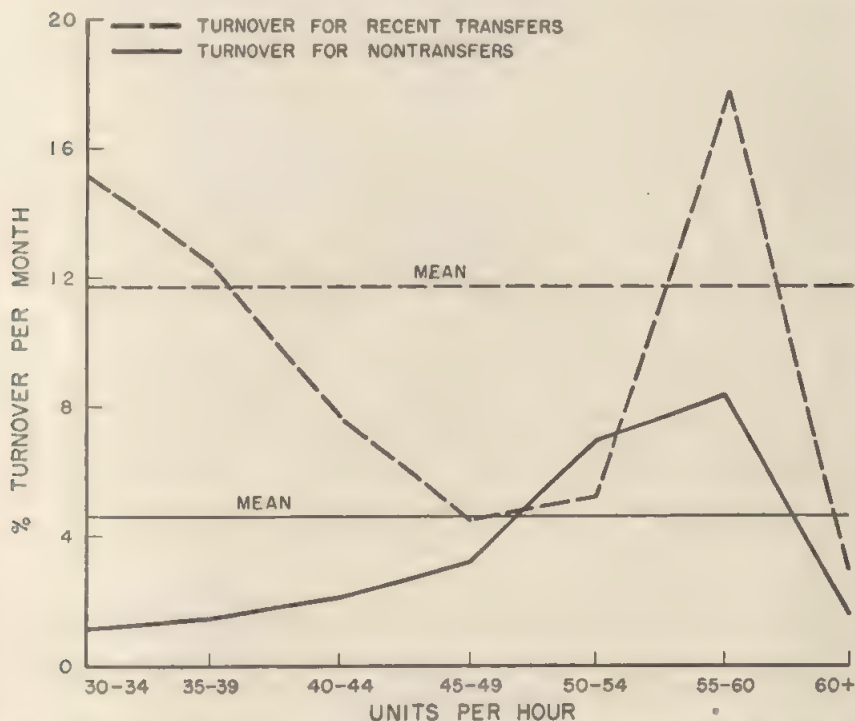


Fig. 19.1. The rate of turnover at various levels of production for transfers as compared with nontransfers.

Though our theory of frustration explains the forms of the two turnover curves in Figure 19.1, it seems hardly adequate to account for the markedly higher level of turnover for transfers as compared to nontransfers. On the basis of the difficulty of the job, it is especially difficult to explain the higher rate of turnover at 55-59 units per hour for transfers. Evidently, additional forces are operating.

Another factor which seems to affect recovery rates of changed operators is the amount of cohesiveness. Observations seem to indicate that a strong psychological subgroup with negative attitudes toward management will display the strongest resistance to change. On the other hand, changed groups with high cohesiveness and positive cooperative attitudes are the best relearners. Collections of individuals with little or no cohesiveness display some resistance to change, but not so strongly as the groups with high cohesiveness and negative attitudes toward management.

An analysis of turnover records for changed operators with high cohesiveness showed a 4% turnover rate per month at 30 to 34 units per hour, not significantly higher than in unchanged operators, but significantly lower than in changed operators with little or no cohesiveness. However, the acts of aggression are far more numerous among operators with high cohesiveness than among operators with little cohesiveness. Since both types of operators experience the same frustration as individuals but react to it so differently, it is assumed that the effect of the ingroup feeling is to set up a restraining force against leaving the group and perhaps even to set up driving forces toward staying in the group. In these circumstances, one would expect some alternative reaction to frustration rather than escape from the field. This alternative is aggression. Strong cohesiveness provides strength so that members dare to express aggression which would otherwise be suppressed.

One common result in a cohesive subgroup is the setting of a group standard concerning production. Where the attitudes toward management are antagonistic, this group standard may take the form of a definite restriction of production to a given level. This phenomenon of restriction is particularly likely to happen in a group that has been transferred to a job where a new piece rate has been set, for they have some hope that, if production never approaches the standard, the management may change the piece rate in their favor.

A group standard can exert extremely strong forces on an individual member of a small subgroup. That these forces can have a powerful effect on production is indicated in the production record of one presser during a period of 40 days:

In the Group	
Days	Efficiency Rating
1-3	46
4-6	52
7-9	53
10-12	56
Scapegoating Begins	
13-16	55
17-20	48
Becomes a Single Worker	
21-24	83
25-28	92
29-32	92
33-36	91
37-40	92

For the first 20 days she was working in a group of other pressers who were producing at the rate of about 50 units per hour. Starting on the 13th day, when she reached standard production and exceeded the production of the other members, she became a scapegoat of the group. During this time her production decreased toward the level of the remaining members of the group. After 20 days the group had to be broken up and all the other members were transferred to other jobs, leaving only the scapegoat operator. With the removal of the group, the group standard was no longer operative, and the production of the one remaining operator shot up from the level of about 45 to 96 units per hour in a period of four days. Her production stabilized at a level of about 92 and stayed there for the remainder of the 20 days. Thus it is clear that the motivational forces induced in the individual by a strong subgroup may be more powerful than those induced by management.

### The Experiments

On the basis of the preliminary theory that resistance to change is a combination of an individual reaction to frustration with strong group-induced forces, it seemed that the most appropriate methods for overcoming the resistance to change would be group methods. Consequently, an experiment was designed (Experiment I) employing three degrees of participation in handling groups to be transferred. The first variation, the control group, involved *no participation* by employees in planning the changes, though an explanation was given to them. The second variation involved *participation through representation* of the workers in designing the changes to be made in the jobs. The third variation consisted of *total participation* by all members of the group in designing the changes. Two experimental groups received the total participation treatment. The four experimental groups were roughly matched with respect to (a) the efficiency ratings of the groups before transfer; (b) the degree of change involved in the transfer; and (c) the amount of cohesiveness observed in the groups.

In no case was more than a minor change in the work routines and time allowances made. The no-participation group, 18 hand pressers, had formerly stacked their work in half-dozen lots on a flat piece of cardboard the size of the finished product. The new job called for stacking their work in half-dozen lots in a box the size of the finished product. The box was located in the same place the cardboard had been. An additional two minutes per dozen was allowed (by the time study) for this new part of the job. This represented a total change of 8.8%.

The group treated with participation through representation, 13 pajama folders, had formerly folded coats with prefolded pants. The new

job called for the folding of coats with unfolded pants. An additional 1.8 minutes per dozen was allowed (by time study) for this new part of the job. This represented a total change of 9.4%.

The two total participation groups, consisting of eight and seven pajama examiners, respectively, had formerly clipped threads from the entire garment and examined every seam. The new job called for pulling only certain threads off and examining every seam. An average of 1.2 minutes per dozen was subtracted (by time study) from the total time on these two jobs. This represented a total job change of 8%.

The no-participation group of hand pressers went through the usual factory routine when they were changed. The production department modified the job, and the new piece rate was set. A group meeting was then held in which the group was told that the change was necessary because of competitive conditions, and that a new piece rate had been set. The new piece rate was thoroughly explained by the time-study man, questions were answered, and the meeting dismissed.

The group which participated through representatives was changed in a different manner. Before any changes took place, a group meeting was held with all the operators to be changed. The need for the change was presented as dramatically as possible, showing two identical garments produced in the factory; one was produced in 1946 and had sold for 100% more than its fellow in 1947. The group was asked to identify the cheaper one and could not do it. This demonstration effectively shared with the group the entire problem of the necessity of cost reduction. A general agreement was reached that a savings could be effected by removing the "frills" and "fancy" work from the garment without affecting the folders' opportunity to achieve a high efficiency rating. Management then presented a plan to set the new job and piece rate:

1. Make a check study of the job as it was being done.
2. Eliminate all unnecessary work.
3. Train several operators in the correct methods.
4. Set the piece rate by time studies on these specially trained operators.
5. Explain the new job and rate to all the operators.
6. Train all operators in the new method so they can reach a high rate of production within a short time.

The group approved this plan (though no formal group decision was reached), and chose the operators to be specially trained. A submeeting with the "special" operators was held immediately following the meeting with the entire group. They displayed a cooperative and interested attitude and immediately presented many good suggestions. This attitude carried over into the working out of the details of the new job, and when the new job and piece rates were set the "special" operators referred to the resultants as "our job," "our rate," etc. The new job and piece rates



were presented at a second group meeting to all the operators involved. The "special" operators served to train the other operators on the new job.

The total participation groups went through much the same kind of meetings. The groups were smaller, and a more intimate atmosphere was established. The need for a change was once again made dramatically clear. The same general plan was presented by management. However, since the groups were small, all operators were chosen as "special" operators; that is, all operators were to participate directly in the designing of the new jobs, and all operators would be studied by the time-study man. It is interesting to observe that in the meetings with these two groups suggestions were immediately made in such quantity that the stenographer had great difficulty in recording them. The group approved of the plans, but again no formal group decision was reached.

## Results

The results of the experiment are summarized in graphic form in Figure 19.2. The gaps in the production curves occur because these groups were paid on a time-work basis for a day or two. The no-participation group improved little beyond their early efficiency ratings. Resistance developed almost immediately after the change occurred. Marked expressions of aggression against management occurred, such as conflict with the methods engineer, expression of hostility against the supervisor, deliberate restriction of production, and lack of cooperation with the supervisor. There were 17% quits in the first 40 days. Grievances were filed about the piece rate, but when the rate was checked, it was found to be a little "loose."

The representation group showed an unusually good relearning curve. At the end of 14 days, the group averaged 61 units per hour. During the 14 days, the attitude was cooperative and permissive. They worked well with the methods engineer, the training staff, and the supervisor. (The supervisor was the same person in the cases of the first two groups.) There were no quits in this group in the first 40 days. This group might have presented a better learning record if work had not been scarce during the first seven days. There was one act of aggression against the supervisor recorded in the first 40 days. We should note that the three special representative operators recovered at about the same rate as the rest of their group.

The total participation groups recovered faster than the others. After a slight drop on the first day of change, the efficiency ratings returned to a prechange level and showed sustained progress thereafter to a level about 14% higher than the prechange level. No additional training was

provided them after the second day. They worked well with their supervisors and no indications of aggression were observed from these groups. There were no quits in either of these groups in the first 40 days.

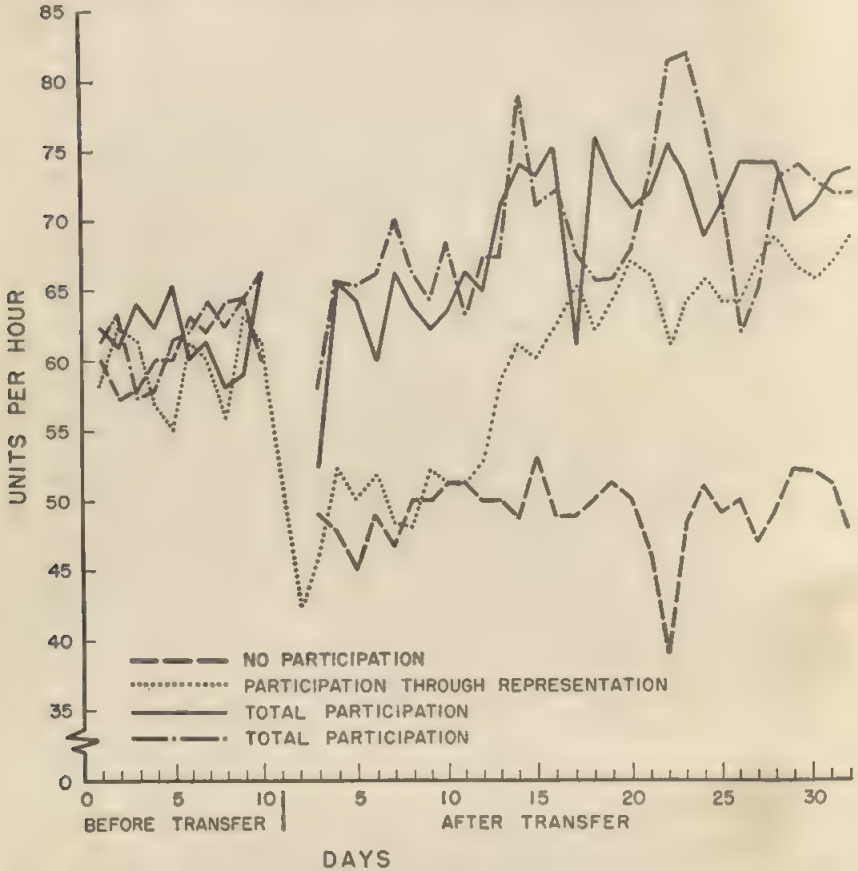


FIG. 19.2. The effects of participation through representation and of total participation on recovery after an easy transfer.

(A fifth experimental group, composed of only two sewing operators, was transferred by the total participation technique. Their new job was one of the most difficult jobs in the factory, in contrast to the easy jobs for the other four experimental groups. As expected, the total participation technique again resulted in an unusually fast recovery rate and a final level of production well above the level before transfer.)

In the first experiment, the no-participation group made no progress after transfer for a period of 32 days. At the end of this period the group was broken up, and the individuals were reassigned to new jobs scattered

throughout the factory. Two and a half months after their dispersal, the 13 remaining members of the original no-participation group were again brought together as a group for a second experiment (Experiment II).

This second experiment consisted of transferring the group to a new job, using the total participation technique. The new job was a pressing

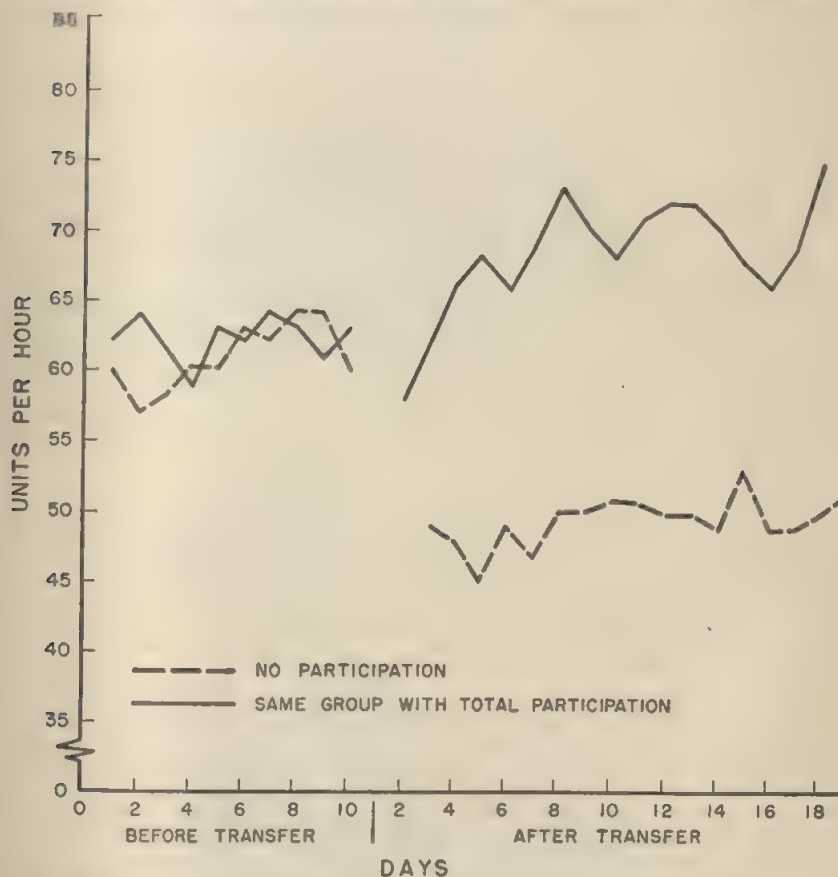


FIG. 19.3. A comparison of the effect of no participation with the total participation procedure on the same group.

job of comparable difficulty to the new job in the first experiment. On the average, it involved about the same degree of change. In the meetings, no reference was made to the previous behavior of the group on being transferred.

The results of the second experiment were in sharp contrast to the first (see Fig. 19.3). With the total participation technique, the same group now recovered rapidly to their previous efficiency rating and, like the

other groups under this treatment, continued on beyond it to a new high level of production. There was no aggression or turnover in the group for 19 days after change, a marked modification of their previous behavior after transfer. Some anxiety concerning their seniority status was expressed, but this was resolved in a meeting of their elected delegate, the union business agent, and a management representative.

### Interpretation

The purpose of this section is to explain the drop in production resulting from transfer, the differential recovery rates of the three experimental treatments, the increases beyond their former levels of production by the participating groups, and the differential rates of turnover and aggression.

The first experiment showed that the rate of recovery is directly proportional to the amount of participation, and that the rates of turnover and aggression are inversely proportional to the amount of participation. The second experiment demonstrated more conclusively that the results obtained depended on the experimental treatment rather than on personality factors like skill or aggressiveness, for identical individuals yielded markedly different results in the no-participation treatment as contrasted with the total-participation treatment.

Apparently total participation has the same type of effect as participation through representation, but the former has a stronger influence. In regard to recovery rates, this difference is not unequivocal because the experiment was unfortunately confounded. Right after transfer, the latter group had insufficient material to work on for a period of seven days. Hence, their slower recovery during this period is at least in part due to insufficient work. In succeeding days, however, there was an adequate supply of work and the differential recovery rate still persisted. Therefore, we are inclined to believe that participation through representation results in slower recovery than does total participation.

Before discussing the details of why participation produces high morale, we shall consider the nature of production levels. In examining the production records of hundreds of individuals and groups in this factory, one is struck by the constancy of the level of production. Though differences among individuals in efficiency rating are very large, nearly every experienced operator maintains a fairly steady level of production, given constant physical conditions. Frequently the given level will be maintained despite rather large changes in technical working conditions.

As Lewin has pointed out, this type of production can be viewed as a quasi-stationary process—in the on-going work the operator is forever sewing new garments, yet the level of the process remains relatively



stationary (3). Thus there are constant characteristics of the production process permitting the establishment of general laws.

In studying production as a quasi-stationary equilibrium, we are concerned with two types of forces: (a) forces on production in a downward direction, and (b) forces on production in an upward direction. In this situation we are dealing with a variety of both upward forces tending to increase the level of production and downward forces tending to decrease the level of production. However, in the present experiment we have no method of measuring independently all of the component forces either downward or upward. These various component forces upward are combined into one resultant force upward, and the several downward component forces combine into one resultant force downward. We can infer a good deal about the relative strengths of these resultant forces.

Where we are dealing with a quasi-stationary equilibrium, the resultant forces upward and the forces downward are opposite in direction and equal in strength at the equilibrium level. Of course either resultant forces may fluctuate over a short period of time, so that the forces may not be equally balanced at a given moment. However, over a longer period of time, and on the average, the forces balance out. Fluctuations from the average occur, but there is a tendency to return to the average level.

Just before being transferred, all of the groups in both experiments had reached a stable equilibrium level at just above the standard production of 60 units per hour. This level was equal to the average efficiency rating for the entire factory during the period of the experiments. Since this production level remained constant, neither increasing nor decreasing, we may be sure that the strength of the resultant force upward was equal to the strength of the resultant force downward. This equilibrium of forces was maintained over the period of time when production was stationary at this level. But the forces changed markedly after transfer, and these new constellations of forces were distinctly different for the various experimental groups.

For the no participation group the period after transfer is a quasi-stationary equilibrium at a lower level, and the forces do not change during the period of 30 days. The resultant force upward remains equal to the resultant force downward, and the level of production remains constant. The force field for this group is represented schematically in Figure 19.1. Only the resultant forces are shown. The length of the vector represents the strength of the force, and the point of the arrow represents the point of application of the force, that is, the production level and the time at which the force applies. Thus the forces are equal and opposite only at the level of 50 units per hour. At higher levels of production the forces downward are greater than the forces upward, and at lower levels

of production the forces upward are stronger than the forces downward. Thus there is a tendency for the equilibrium to be maintained at an efficiency rating of 50.

The situation for the other experimental groups after transfer can be viewed as a quasi-stationary equilibrium of a different type. Figure 19.5 gives a schematic diagram of the resultant forces for all the participation groups. At any given level of production, such as 50 units per hour or 60 units per hour, both the resultant forces upward and the resultant forces

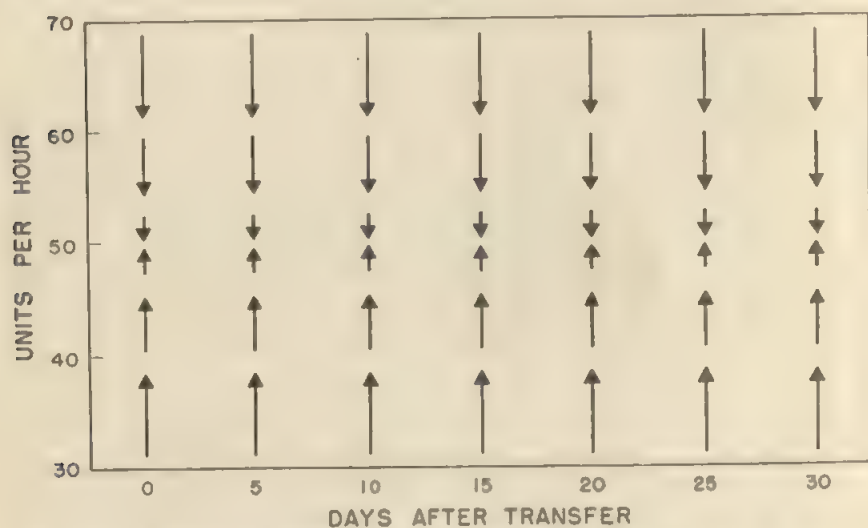


FIG. 19.4. A schematic diagram of the quasi-stationary equilibrium for the no-participation group after transfer.

downward change over the period of 30 days. During this time the point of equilibrium, which starts at 50 units per hour, gradually rises until it reaches a level of over 70 units per hour after 30 days. Yet here again the equilibrium level has the character of a "central force field" where, at any point in the total field, the resultant of the upward and the downward forces is in the direction of the equilibrium level.

To understand how the differences among the experimental and the control treatments produced the differences in force fields represented in Figures 19.4 and 19.5, it is not sufficient to consider only the resultant forces. We must also look at the component forces for each resultant force.

There are three main component forces influencing production in a downward direction: (a) the difficulty of the job, (b) a force corresponding to avoidance of strain, and (c) a force corresponding to a group standard to restrict production to a given level. The resultant force upward in the direction of greater production is composed of three additional com-

ponent forces: (a) the force corresponding to the goal of standard production; (b) a force corresponding to pressures induced by the management through supervision; and (c) a force corresponding to a group standard of competition. Let us examine each of these six component forces.

*Job difficulty.* For all operators, the difficulty of the job is one of the forces downward on production. The difficulty of the job, of course, is

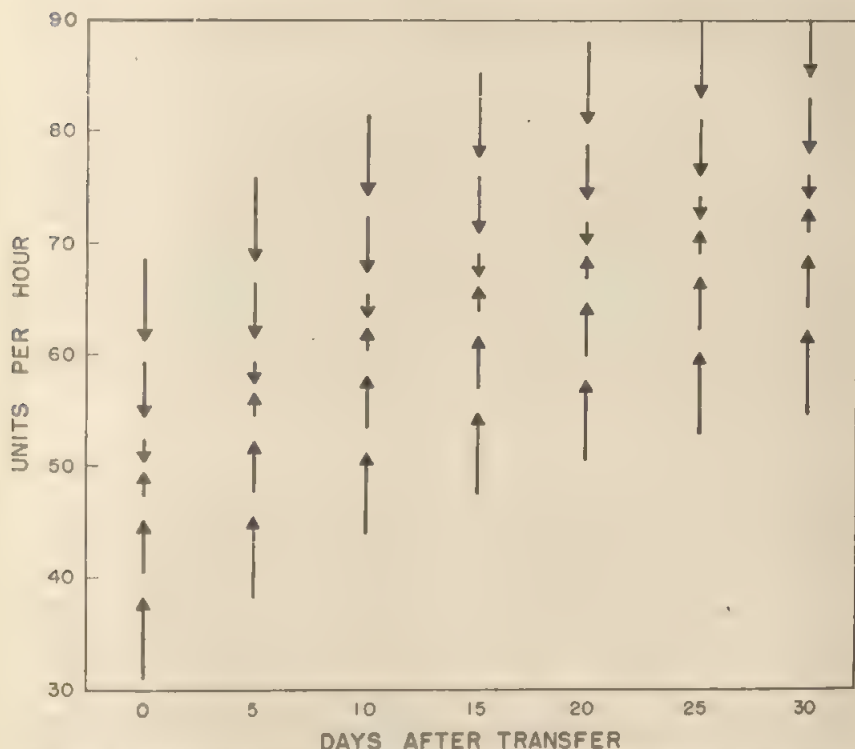


FIG. 19.5. A schematic diagram of the quasi-stationary equilibrium for the experimental groups after transfer.

relative to the skill of the operator. The given job may be very difficult for an unskilled operator but relatively easy for a highly skilled one. In the case of a transfer a new element of difficulty enters. For some time the new job is much more difficult, for the operator is unskilled at that particular job. In addition to the difficulty experienced by any learner, the transfer often encounters the added difficulty of proactive inhibition. Where the new job is similar to the old job, there will be a period of interference between the two similar but different skills required. For this reason a very efficient operator whose skills have become almost unconscious may suffer just as great a drop as a much less efficient operator.

Except for the experiment on only two operators, the difficulty of these easy jobs does not explain the differential recovery rates, because both the initial difficulty and the amount of change were equated for these groups. The two operators probably dropped further and recovered more slowly than any of the other three groups under total participation because of the greater difficulty of the job.

*Strain avoidance.* The force toward lower production corresponding to the difficulty of the job (or the lack of skill of the person) has the character of a restraining force; that is, it acts to prevent locomotion rather than as a driving force causing locomotion. However, in all production there is a closely related driving force towards lower production, namely, "strain avoidance." We assume that working too hard and working too fast is an unpleasant strain; and corresponding to this negative valence there is a driving force in the opposite direction, namely, towards taking it easy or working slower. The higher the level of production the greater will be the strain and, other things being equal, the stronger will be the downward force of strain avoidance. Likewise, the greater the difficulty of the job, the stronger will be the force corresponding to strain avoidance. But the greater the operator's skill, the smaller will be the strain and the strength of the force of strain avoidance. Therefore:

**Proposition 5.** The

$$\text{strength of the force of strain avoidance} = \frac{\text{job difficulty} \times \text{production level}}{\text{skill of operator}}$$

The differential recovery rates of the three experimental groups in Experiment I cannot be explained by strain avoidance because job difficulty, production level, and operator skill were matched at the time immediately following transfer. Later, however, when the experimental treatments had produced a much higher level of production, these groups were subjected to an increased downward force of strain avoidance which was stronger than in the no-participation group in Experiment I. Evidently other forces were strong enough to overcome this force of strain avoidance.

*The goal of standard production.* In considering the negative attitudes toward transfer and the resistance to being transferred, there are several important aspects of the complex goal of reaching and maintaining a level of 60 units per hour. For an operator producing below standard, this goal is attractive because it means success, high status in the eyes of her fellow employees, better pay, and job security. On the other hand, there is a strong force against remaining below standard because this lower level means failure, low status, low pay, and the danger of being fired. Thus it is clear that the upward force corresponding to the goal of standard production will indeed be strong for the transfer who has dropped below standard.



It is equally clear why any operator who accepts the stereotype about transfer shows such strong resistance to being changed. She sees herself as becoming a failure and losing status, pay, and perhaps the job itself. The result is a lowered level of aspiration and a weakened force toward the goal of standard production.

Just such a weakening of the force toward 60 units per hour seems to have occurred in the no-participation group in Experiment I. The participation treatments, on the other hand, seem to have involved the operators in designing the new job and setting the new piece rates in such a way that they did not lose hope of regaining the goal of standard production. Thus participation resulted in a stronger force toward higher production. However, this force alone can hardly account for the large differences in recovery rate between the no-participation group and the experimental groups; certainly it does not explain why the latter increased to a level so high above standard.

*Management pressure.* On all operators below standard the management exerts a pressure for higher production. This pressure is no harsh and autocratic treatment involving threats; rather, it takes the form of persuasion and encouragement by the supervisors. They attempt to induce the low rating operator to improve her performance and to attain standard production.

Such an attempt to induce a psychological force on another person may have several results. In the first place the person may ignore the attempt of the inducing agent, in which case there is no induced force acting on the person. On the other hand, the attempt may succeed so that an induced force on the person exists. Other things being equal, whenever there is an induced force acting on a person, the person will locomote in the direction of the force. An induced force which depends on the power field of an inducing agent—some other individual or group—will cease to exist when the inducing power field is withdrawn. In this respect it is different from an "own" force which stems from a person's own needs and goals.

The reaction of a person to an effective induced force will vary depending, among other things, on the person's relation to the inducing agent. A force induced by a friend may be accepted in such a way that it acts more like an own force. An effective force induced by an enemy may be resisted and rejected so that the person complies unwillingly and shows signs of conflict and tension. Thus in addition to what might be called a "neutral" induced force, we also distinguish an *accepted* induced force and a *rejected* induced force. Naturally, the acceptance and the rejection of an induced force can vary in degree from zero (i.e., a neutral induced force) to very strong acceptance or rejection. To account for the difference in character between the acceptance and the rejection of an induced force, we make the following propositions:

**Proposition 6.** The acceptance of an induced force sets up additional "own" forces in the same direction.

**Proposition 7.** The rejection of an induced force sets up additional "own" forces in the opposite direction.

The grievances, aggression, and tension in the no-participation group in the first experiment indicate that they rejected the force toward higher production induced by the management. The group accepted the stereotype that transfer is a calamity, but the no-participation procedure did not convince them that the change was necessary, and they viewed the new job and the new piece rates set by management as arbitrary and unreasonable.

The other experimental groups, on the contrary, participated in designing the changes and setting the piece rates so that they spoke of the new job as "our job" and the new piece rates as "our rates." Thus they accepted the new situation and accepted the management-induced force toward higher production.

From the acceptance by the experimental groups and the rejection by the no-participation group of the management-induced forces, we may derive (by Props. 6 and 7 above) that the former had additional "own" forces toward higher production, whereas the latter had additional "own" forces toward lower production. This difference helps to explain the better recovery rate of the participation groups.

*Group standards.* Probably the most important force affecting the recovery under the no-participation procedure was a group standard, set by the group, restricting the level of production to 50 units per hour. Evidently this explicit agreement to restrict production is related to the group's rejection of the change and of the new job as arbitrary and unreasonable. Perhaps they had faint hopes of demonstrating that standard production could not be attained and thereby obtain a more favorable piece rate. In any case there was a definite group phenomenon which affected all the members of the group. We have already noted the striking example of the presser whose production was restricted in the group situation to about half the level she attained as an individual. In the no-participation group, we would also expect the group to induce strong forces on the members. The more a member deviates above the standard, the stronger would be the group induced force to conform to the standard, for such deviations both negate any possibility of management's increasing the piece rate and at the same time expose the other members to increased pressure from management. Thus individual differences in levels of production should be sharply curtailed in this group after transfer.

An analysis was made, for all groups, of the individual differences within each group in levels of production. In Experiment I, the 40 days before change were compared with the 80 days after change; in Experiment II, the 10 days before change were compared to the 17 days after

change. As a measure of variability, the standard deviation was calculated each day for each group. The average daily standard deviations before and after change were as follows:

Experiment I	Before Change	After Change
No participation	9.8	1.9
Participation through representation	9.7	3.8
Total participation	10.3	2.7
Total participation	9.9	2.4

Experiment II	Before Change	After Change
Total participation	12.7	2.9

There is, indeed, a marked decrease in individual differences within the no-participation group after their first transfer. In fact, the restriction of production resulted in a lower variability than in any other group. Thus, we may conclude that the group standard at 50 units per hour set up strong group-induced forces which were important components in the central force field shown in Figure 19.4. It is now evident that for the no-participation group the quasi-stationary equilibrium after transfer has a steep gradient around the equilibrium level of 50 units per hour—the strength of forces increases rapidly above and below this level. It is also clear that the group standard to restrict production is a major reason for the lack of recovery in the no-participation group.

The table of variability also shows that the experimental treatments markedly reduced variability in the other four groups after transfer. In the group having participation by representation, this smallest reduction of variability was produced by a group standard of individual competition. Competition among members of the group was reported by the supervisor soon after transfer. This competition was a force toward higher production which resulted in good recovery to standard and continued progress beyond standard.

The total-participation groups showed a greater reduction in variability following transfer. These two groups were transferred on the same day. Group competition developed between the two groups, and this competition, which evidently resulted in stronger forces on the members than did the individual competition, was an effective group standard. The standard gradually moved to higher and higher levels of production, with the result that the groups not only reached but far exceeded their previous levels of production.

Probably a major determinant of the strength of these group standards is the cohesiveness of the group (1). Whether this power of the group over the members was used to increase or to decrease productivity seemed to depend upon the use of participation (4).

### *Turnover and Aggression*

Returning now to our preliminary theory of frustration, we can see several revisions. The difficulty of the job and its relation to skill and strain avoidance has been clarified in Proposition 5. It is now clear that the driving force toward 60 is a complex affair: it is partly a negative driving force corresponding to the negative valence of low pay, low status, failure, and job insecurity. Turnover results not only from the frustration produced by the conflict of these two forces, but also from a direct attempt to escape from the region of these negative valences. For the members of the no-participation group, the group standard to restrict production prevented escape by increasing production, so that quitting their jobs was the only remaining escape. In the participation groups, on the contrary, both the group standards and the additional own forces resulting from the acceptance of management-induced forces combined to make increasing production the distinguished path of escape from this region of negative valence.

In considering turnover as a form of escape from the field, it is not enough to look only at the psychological present; one must also consider the psychological future. The employee's decision to quit the job is rarely made exclusively on the basis of a momentary frustration or an undesirable present situation. She usually quits when she also sees the future as equally hopeless. The operator transferred by the usual factory procedure (including the no-participation group) has, in fact, a realistic view of the probability of continued failure because, as we have already noted, 62% of transfers do fail to recover to standard production. Thus, the higher rate of quitting for transfers as compared to nontransfers results from a more pessimistic view of the future.

The no-participation procedure had the effect for the members of setting up management as a hostile power field. They rejected the forces induced by this hostile power field, and group standards to restrict production developed within the group in opposition to management. In this conflict between the power field of management and the power field of the group, the group attempted to reduce the strength of the hostile power field relative to the strength of their own power field. This change was accomplished in three ways: (a) The group increased its own power by developing a more cohesive and well-disciplined group. (b) They secured "allies" by getting the backing of the union in filing a formal grievance about the new piece rate. (c) They attacked the hostile power field directly in the form of aggression against the supervisor, the time study engineer, and the higher management. Thus the aggression was derived not only from individual frustration, but also from the conflict between two groups. Furthermore, this situation of group conflict both helped to define



management as the frustrating agent and gave the members strength to express any aggressive impulses produced by frustration.

### Conclusions

It is possible for management to modify greatly or to remove completely group resistance to changes in methods of work and the ensuing piece rates. This change can be accomplished by the use of group meetings in which management effectively communicates the need for change and stimulates group participation in planning the changes.

For Harwood's management, and presumably for managements of other industries using an incentive system, this experiment has important implications in the field of labor relations. A majority of all grievances presented at Harwood have always stemmed from a change situation. By preventing or greatly modifying group resistance to change, this concomitant to change may well be greatly reduced. The reduction of such costly phenomena as turnover and slow relearning rates presents another distinct advantage.

Harwood's management has long felt that action research, such as the present experiment, is the only key to better labor-management relations. It is only by discovering the basic principles and applying them to the true causes of conflict that an intelligent, effective effort can be made to correct the undesirable effects of the conflict.

### REFERENCES

1. Festinger, L., Back, K., Schachter, S., Kelley, H., & Thibaut, J. *Theory and experiment in social communication*. Ann Arbor, Mich.: Institute for Social Research, 1950.
2. French, John R. P., Jr. The behavior of organized and unorganized groups under conditions of frustration and fear. *University of Iowa Studies in Child Welfare*, 1944, 20, 229-308.
3. Lewin, Kurt. Frontiers in group dynamics. *Human Relations*, 1947, 1, 5-41.
4. Schachter, S., Ellerson, N., McBride, Dorothy, & Gregory, Doris. An experimental study of cohesiveness and productivity. *Human Relations*, 1951, 4, 229-238.

## Lecture vs. Group Decision in Changing Behavior

Jacob Levine and John Butler

To the industrial or group leader who is seeking to change the behavior or attitudes of people, psychology has had little to offer in the way of practical techniques or guiding principles. One of the few important contributions to this problem was that of Lewin (1) when he compared the relative effectiveness of group decision with formal lectures in influencing a group of women to change their eating habits during the war. His findings indicated that group decision was the more effective method. However, Lewin recognized that his results may have been due to a difference in expectation between the two groups, for the group decision group had been told that a later inquiry would be made as to whether or not the members had carried out the suggested changes. No such information was given to the lecture group. This forewarning of a subsequent checkup may have had some influence on the decision of the first group to change, with a consequent bias in the result.

Studies on prejudice and social attitudes have demonstrated that education in itself does not reduce prejudice nor change attitudes significantly (see Samelson [4]). The complex relationship between learning, perception, and motivation is no more dramatically illustrated than here, where learning and correct perception can occur without leading to significant action. Were the acquisition of knowledge alone sufficient to lead to behavior change, many individuals would not be repeating again and again the same personally and socially disastrous behavior patterns though they well know that different behavior would lead to more successful social relations. Within this problem lie hidden some of the most crucial problems of human adjustment and learning.

Though we recognize the importance of motivation as well as the acquisition of knowledge in social change, it is often difficult to determine

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the changing motivational factors in the specific situation. This cannot be omitted from the understanding of such problems as to why group decision is more effective as a behavior modifier than is the formal lecture. One can talk about greater ego involvement in the one case, but just how this is related to motivation and to action is far from clear. As Lewin has pointed out, a higher degree of ego involvement does not necessarily lead to a decision to act. He suggested that perhaps in group decision the members are more likely "to make up their minds" or reach a decision. And though the making of a decision takes but a minute or two, once it is made "it has an effect of freezing this motivational constellation for action." But this explanation does not tell us how it is that the individual makes a decision to act more readily in the group decision than he does in the lecture. Though in each case the translation of decision into action was ultimately made by the individual, it would seem that the step from the absorption of basic information to the making of a decision was more of a group process in the group decision method than it was in the lecture method.

The present experiment was designed to repeat that of Lewin in a different setting under carefully controlled conditions of information given and behavior changes measured. In this study, group decision is compared with formal lecture as a method of producing changes in socially undesirable behavior. Both methods are then compared with one in which no attempt is made to bring about any change. Thus, the experiment was designed to answer two questions: (a) Is the acquisition of knowledge enough to lead a group of individuals to change a socially undesirable behavior pattern? (b) Is group decision a more effective method of producing a change in behavior than is the formal lecture?

### The Experiment

The subjects consisted of 29 supervisors of 395 workers in a large manufacturing plant. The workers were on an hourly rate. These factory workers represented a wide variety of jobs and skills, ranging from unskilled manual labor to the most highly skilled machinists and toolmakers. All of these jobs were classified into nine different grades on the basis of skill and training required.

Within each job grade three different hourly wage rates prevailed. The particular rate paid to any worker was determined in large part by the quality of his performance on the job. Performance was evaluated by one of the 29 foremen who supervised the work of these 395 men. Every six months each worker was rated by his foreman on established rating scales for five factors: (a) accuracy; (b) effective use of working time; (c) output; (d) application of job knowledge; and (e) cooperation. The sum of the

scores on each of these five scales comprised a worker's total performance rating and determined what wage rate he would get.

Unfortunately, the results of this rating system were not equal to expectations. The foremen, in executing their ratings, tended to overrate those working in the higher job grades and to underrate those in the lower grades. This positive and negative "halo effect" resulted in the workers in the lower grades of jobs receiving the lowest of their respective wage rates, while the more highly skilled workers consistently received the highest of their respective wage rates. Evidently the foremen were not rating performance of the individual worker, but the grade of the job as well.

The problem was set up to determine the most effective method of getting these supervisors to change the basis for the ratings so that a more equitable rating system would prevail. Our objective was to help these supervisors see that their task in rating each worker was to consider only how well he did his job, and not how difficult the job was. He was to understand that he was to rate the man and not the job. The task of the present experiment was to determine which was the more effective method of achieving this change in behavior of the 29 rating supervisors, group decision or the formal lecture.

### Experimental Procedure

The 29 supervisors were randomly divided into three groups of 9, 9, and 11. It may be pointed out that all supervisors were experienced raters and had been rating employees for a number of years. Group A consisted of 9 supervisors of 120 workers, served as a control group, and received no special instructions prior to rating. Group B consisted of 9 supervisors of 123 men and served as the discussion group. Group C consisted of 11 supervisors of 152 men and served as the lecture group.

Several days prior to rating, the members of Group B were gathered together around a table with the discussion leader. The leader did not sit at the head of the table, nor did he lead the discussion. He introduced the problem by showing a graph of the previous rating and raised the question why it was that the highly skilled workers were consistently rated higher in performance than the less skilled. From that point on, the leader merely acted as moderator, and avoided injecting himself into the discussion. All decisions and opinions were made solely by the group members. The discussion lasted one hour and a half. The group expressed a number of ideas and arrived at several conclusions. They finally reached one decision acceptable to the group: The way to avoid the inequalities in rating was to disregard the difficulty of the jobs and rate only the man



doing the job. Consideration was to be given only to how well a worker was doing his job. All 9 members agreed on this decision.

Group C, the lecture group, gathered in a formal lecture room and all sat facing the leader. They were given a detailed lecture on the technique and theory of employee performance rating. Some background material on wage administration and job evaluation was also included. The lecturer carefully pointed out the errors of their previous ratings and interpreted the reasons for their occurrence. He illustrated his lecture with graphs and figures. He finally explained what each rater was supposed to do, that he was to rate individual performance and not difficulty of the job. After the lecture, questions were encouraged and asked by the raters. Complete answers were given. The total session lasted about one hour and a half.

### Experimental Results

Table 20.1 presents the results of the supervisors' ratings according to labor grade. For comparison, the previous ratings by the same supervisors are included. In the pretraining rating, we see the gradual decrease in mean rating as we go down in the labor grade. This "halo effect" characterizes each of the three experimental groups. In the posttraining rating some changes are observable.

TABLE 20.1

MEAN RATING DIFFERENCES BETWEEN LOW AND HIGH LABOR GROUPS BEFORE AND AFTER TRAINING SESSIONS

LABOR GRADE	GROUP A CONTROL			GROUP B GROUP DECISION			GROUP C LECTURE		
	Mean Rating		Signif. * (p)	Mean Rating		Signif. * (p)	Mean Rating		Signif. * (p)
	1st	2nd		1st	2nd		1st	2nd	
Low	1.7	1.7		1.7	1.7	.31	1.8	1.7	.23
High	2.0	2.0	.81	2.0	1.7	.01	2.4	2.2	.23
Mean diff.	.35	.37		.33	.00		.63	.45	
Signif. * (p)	.01	.01		.07	.84		.01	.01	

\* This is the probability that a difference this great or greater could have arisen simply through errors of random sampling.

For the sake of simplification of the results, the nine labor grades were arbitrarily divided into two categories: Low Group and High Group. The first four labor grades were placed in the High, and the last five in the Low. When we compare the mean ratings of the Low and the High labor

groups prior to training, we find that the difference is significant at the 1% level of confidence for two groups and at the 7% level for the third. In each case the size of the difference is at least one-third of a rating unit in a total of three units.

In the second rating, only Group B shows any significant change in difference in the mean ratings of Low and High Grades. For Group A, the control group, the mean difference remains almost the same, and is still significant to the 1% level of confidence. Group C, the lecture group, shows a small decrease in the difference, but it is still significant to the 1% level.

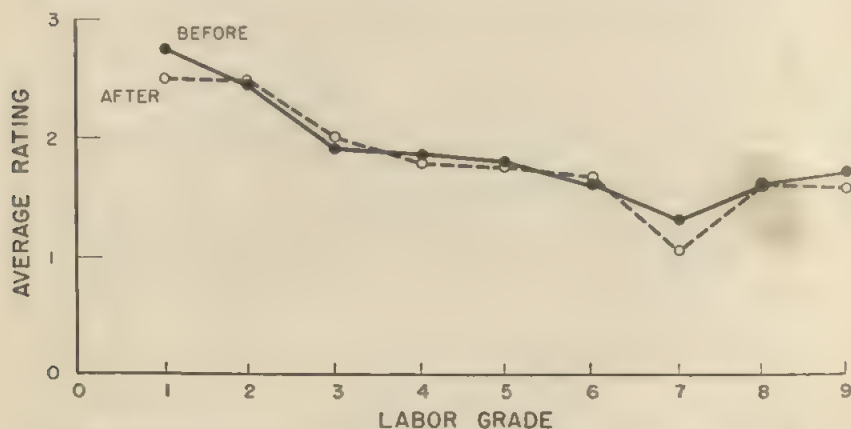


FIG. 20.1. Average rating of raters with no training sessions (Group A).

We may conclude that performance ratings were significantly affected only after the raters had had a group discussion and had reached a group decision. Neither increased experience in rating nor the learning about their previous errors in rating had any significant influence. Our findings completely confirm those of Lewin in demonstrating the greater effectiveness of group decision over the lecture method of training.

The relationships between mean ratings for pre- and posttraining are shown graphically in Figures 20.1, 20.2, and 20.3. For Group A, the two curves are seen to be essentially the same. All pretraining curves slope downward from high to low ratings more or less similarly. In the post-training curves it is only the one representing Group B which shows a flattening or equalization of mean ratings for the nine labor grades. Of interest is the fact that, of the three groups, Group B had shown the greatest difference between high and low labor grades prior to training. The posttraining ratings of Group C, the lecture group, show a consistent lowering all along the curve from the previous ratings. This reduction might be the result of an increased conservatism in rating by these raters

as a consequence of the lecture, without affecting their basically prejudiced ratings.

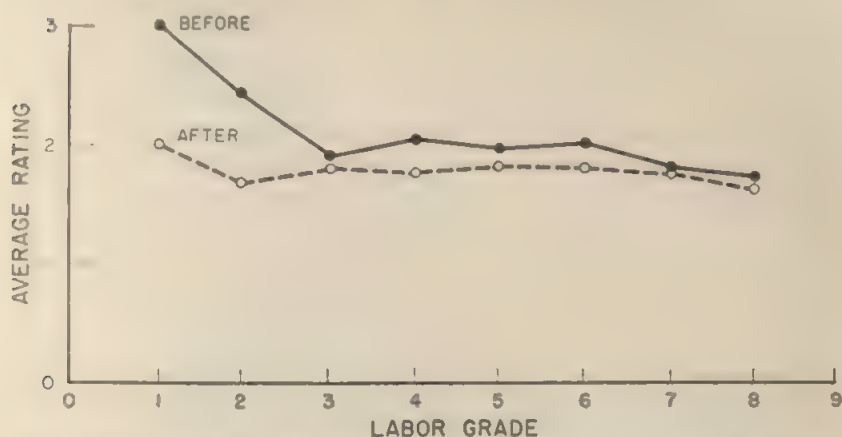


FIG. 20.2. Average rating of raters before and after group decision session (Group B).

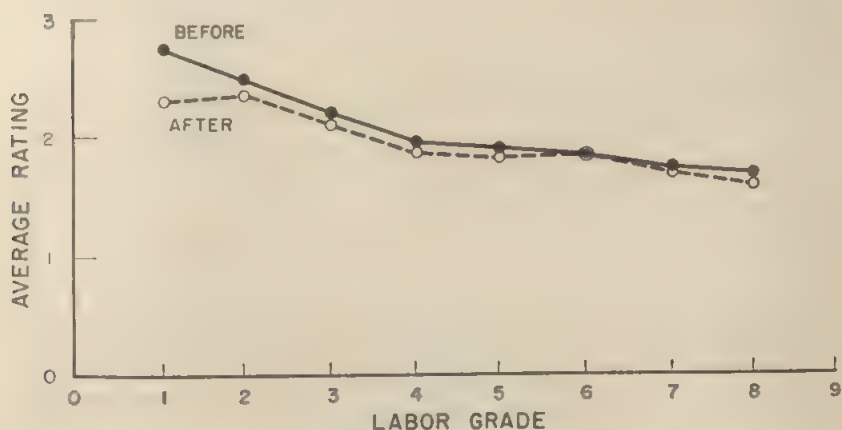


FIG. 20.3. Average rating of raters before and after lecture session (Group C).

### Discussion

It is clear that group decision was more effective in reducing the prejudiced ratings of these factory supervisors than was the formal lecture. This in itself is a significant finding. But what seems to be even more striking is the fact that the lecture method had practically no influence upon the discrepancies in rating. It is generally assumed that once an individual or a group of individuals learn that they have been behaving

in a socially undesirable way, they will immediately take steps to change, particularly if it is clear to these individuals that it is their responsibility to eliminate such errors. Our findings do not support such a notion. The acquisition of knowledge does not automatically lead to action.

The findings also indicate that once a group arrives at a decision to act, the members, even though they may act as individuals, take on that decision and act in accordance with it. The force of this group decision was evidently sufficient to overcome the resistance to change in habitual ways of thinking and acting. How these group forces were able to operate upon the individual the present study does not reveal. Further research is necessary to determine whether or not group decision leads to a "freezing of decision to act," whereas the lecture method does not.

### Summary

A formal lecture method was compared with group decision in inducing 29 supervisors of 395 factory workers to overcome their biased performance ratings. The results showed that only the group of supervisors involved in group decision improved in their ratings. The lecture group did not change, and persisted in overrating the more highly skilled workers and underrating the less skilled. The conclusion was drawn that group decision is more effective than the formal lecture in overcoming resistance to change in behavior.

### REFERENCES

1. Lewin, K. Group decision and social change. In Newcomb, T., & Hartley, E. (Eds.), *Readings in social psychology*. New York: Holt, 1947.
2. Marrow, A., & French, J. R. P. Changing a stereotype in industry. *Journal of Social Issues*, 1945, 1, 33-37.
3. Radke, M., & Klisurich, D. Experiments in changing food habits. *Journal of American Dietetic Association*, 1947, 23, 403-409.
4. Samuelson, B. Does education diminish prejudice? *Journal of Social Issues*, 1945, 1, 11-13.



# 21

## Studies in Group Decision

Kurt Lewin

Scientifically, the question of group decision lies at the intersection of many basic problems of group life and individual psychology. It concerns the relation of motivation to action and the effect of a group setting on the individual's readiness to change or to keep certain standards. It is related to one of the fundamental problems of action-research, namely, how to change group conduct so that it will not slide back to the old level within a short time. It is in this wider setting of social processes and social management that group decision should be viewed as one means of social change.

### Lecture Compared with Group Decision (Red Cross Groups)

A preliminary experiment in changing food habits <sup>1</sup> was conducted with six Red Cross groups of volunteers organized for home nursing. Groups ranged in size from 13 to 17 members. The objective was to increase the use of beef hearts, sweetbreads, and kidneys. If one considers the psychological forces which kept housewives from using these organs, one is tempted to think of rather deep-seated aversions requiring something like psychoanalytical treatment. Doubtless a change in this respect is a much more difficult task than, for instance, the introduction of a new vegetable such as escarole. There were, however, only 15 minutes available.

In three of the groups, attractive lectures were given which linked the problem of nutrition with the war effort, emphasized the vitamin and mineral value of the three meats, giving detailed explanations with the aid of charts. Both the health and economic aspects were stressed. The preparation of these meats was discussed in detail, as well as techniques

The material in this chapter is drawn from several more technical reports. These are listed in the references at the end of the chapter.

<sup>1</sup> The studies on nutrition discussed in this article were conducted at the Child Welfare Research Station of the State University of Iowa for the Food Habits Committee of the National Research Council (Executive Secretary, Margaret Mead).

for avoiding those characteristics to which aversions were oriented (odor, texture, appearance, etc.). Mimeographed recipes were distributed. The lecturer was able to arouse the interest of the groups by giving hints of her own methods for preparing these "delicious dishes," and her success with her own family.

For the other three groups Mr. Alex Bavelas developed the following procedure of group decision: Again the problem of nutrition was linked with that of the war effort and general health. After a few minutes, a discussion was started to see whether housewives could be induced to participate in a program of change without attempting any high-pressure salesmanship. The group discussion about "housewives like themselves" led to an elaboration of the obstacles which a change in general, and particularly a change toward sweetbreads, beef hearts, and kidneys, would encounter, such as the dislike of the husband, the smell during cooking, etc. The nutrition expert offered the same remedies and recipes for preparation which were presented in the lectures to the other groups. But in these groups preparation techniques were offered after the groups had become sufficiently involved to be interested in knowing whether certain obstacles could be removed.

In the earlier part of the meeting, a census was taken on how many women had served any of these foods in the past. At the end of the meeting, the women were asked by a showing of hands who was willing to try one of these meats within the next week.

A follow-up showed that only 3% of the women who heard the lectures served one of the meats never served before, whereas after group decision 32% served one of them (Fig. 21.1).

If one is to understand the basis of this striking difference, several factors may have to be considered:

*Degree of involvement.* Lecturing is a procedure by which the audience is chiefly passive. The discussion, if conducted correctly, is likely to lead to a much higher degree of involvement. The procedure of group decision in this experiment follows a step-by-step method designed (a) to secure high involvement and (b) not to impede freedom of decision. The problem of food changes was discussed in regard to "housewives like yourselves" rather than in regard to themselves. This minimized resistance to considering the problems and possibilities in an objective, unprejudiced manner, in much the same way that such resistance has been minimized in interviews which use projective techniques, or in a sociodrama which uses an assumed situation of role playing rather than a real situation.

*Motivation and decision.* The prevalent theory in psychology assumes action to be the direct result of motivation. I am inclined to think that we shall have to modify this theory. We shall have to study the particular conditions under which a motivating constellation leads or does not lead

to a decision, or to an equivalent process through which a state of "considerations" (indecisiveness) is changed into a state where the individual has "made up his mind" and is ready for action, although he may not act at that moment.

The act of decision is one of those transitions. A change from a situation of undecided conflict to decision does not mean merely that the forces toward one alternative become stronger than those toward another alternative. If this were the case, the resultant force would frequently be extremely small. A decision rather means that the potency of one alterna-

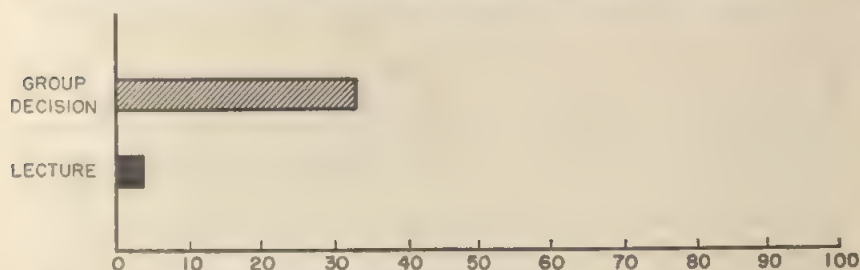


FIG. 21.1. Percentage of individuals serving type of food never served before, after lecture and after group decision.

tive has become zero, or is so decidedly diminished that the other alternative and the corresponding forces dominate the situation. This alternative itself might be a compromise. After the decision people may feel sorry and change their decision. We cannot speak of a real decision, however, before one alternative has become dominant so far as action is concerned. If the opposing forces in a conflict merely change so that the forces in one direction become slightly greater than in the other direction, a state of blockage or extremely inhibited action results rather than that clear one-sided action which follows a real decision.

Lecturing may lead to a high degree of interest. It may affect the motivation of the listener. But it seldom brings about a definite decision on the part of the listener to take a certain action at a specific time. A lecture is not often conducive to decision.

Evidence from everyday experience and from some preliminary experiments by Bavelas in a factory indicate that even group discussions, although usually leading to a higher degree of involvement, as a rule do not lead to a decision. It is very important to emphasize this point. Although group discussion is in many respects different from lectures, it shows no fundamental difference on this point.

Of course, there is a great difference in asking for a decision after a lecture or after a discussion. Since discussion involves active participation of the audience and a chance to express motivations corresponding to

different alternatives, the audience might be more ready "to make up its mind," that is, to make a decision after a group discussion than after a lecture. A group discussion gives the leader a better indication of where the audience stands and what particular obstacles have to be overcome.

In the experiment at hand, we are dealing with a group decision after discussion. The decision itself takes but a minute or two. (It was done through raising of hands as an answer to the question, "Who would like to serve kidneys, sweetbreads, and beef hearts next week?") The act of decision, however, should be viewed as a very important process of giving dominance to one of the alternatives, serving or not serving. It has an effect of freezing this motivational constellation for action. We shall return to this point later.

*Individuals versus group.* The experiment does not try to bring about a change of food habits by an approach to the individual, as such, nor does it use the "mass approach" characteristic of radio and newspaper propaganda. Closer scrutiny shows that both the mass approach and the individual approach place the individual in a quasi-private, psychologically isolated situation with himself and his own ideas. Although he may, physically, be part of a group listening to a lecture, he finds himself in an "individual situation," psychologically speaking.

The present experiment approaches the individual as a member of a face-to-face group. We know, for instance, from experiments in level of aspiration (4) that goal setting is strongly dependent on group standards. Experience in leadership training and in many areas of re-education, such as re-education regarding alcoholism or delinquency (3), indicates that it is easier to change the ideology and social practice of a small group handled together than of single individuals. One of the reasons why "group-carried changes" are more readily brought about seems to be the unwillingness of the individual to depart too far from group standards; he is likely to change only if the group changes. We shall return to this problem.

One may try to link the greater effectiveness of group decision procedures to the fact that the lecture reaches the individual in a more individualistic fashion than group discussion. If a change of sentiment of the group becomes apparent during the discussion, the individual will be more ready to come along.

It should be stressed that in our case the decision which follows the group discussion does not have the character of a decision in regard to a group goal; it is rather a decision about individual goals in a group setting.

*Expectation.* The difference between the results of the lectures and the group decision may be due to the fact that only after group decision did



the discussion leader mention that an inquiry would be made later as to whether a new food was introduced into the family diet.

*Leader personality.* The difference in effectiveness may be due to differences in leader personality. The nutritionist and the housewife who did the lecturing were persons of recognized ability, experience and success. Still, Mr. Bavelas, who led the discussion and the subsequent decision, is an experienced group worker and doubtless of unusual ability in this field.

To determine which of these or other factors are important, a number of systematic variations have to be carried out. To determine, for instance, the role of the decision as such, one can compare the effect of group discussion with and without decision. To study the role of group involvement and the possibility of sensing the changing group sentiment, one could introduce decisions after both, lecture and discussion, and compare their effects.

The following experiments represent partly analytical variations, partly repetitions with somewhat different material.

### **Lecture versus Group Decision (Neighborhood Groups)**

Dana Klisurich, under the direction of Marian Radke, conducted experiments with 6 groups of housewives composed of 6-9 members per group. She compared the effect of a lecture with that of group decision. The topic for these groups was increasing home consumption of milk, in the form of fresh or evaporated milk, or both (7).

The procedure followed closely that described above. Again there was no attempt at high-pressure salesmanship. The group discussion proceeded in a step-by-step way, starting again with "what housewives in general might do," and only then leading to the individuals present. The lecture was kept as interesting as possible. The knowledge transmitted was the same for lecture and group decision.

A checkup was made after two weeks and after four weeks. As in the previous experiments, group decision showed considerably greater effectiveness, both after two weeks and after four weeks and for both fresh and evaporated milk (Figs. 21.2 and 21.3). This experiment permits the following conclusions:

1. It shows that the greater effectiveness of the group decision in the first experiment is not merely the result of the personality or training of the leader. The leader was a lively person and was interested in the people, but she did not have particular training in group work. She had been carefully advised and had had a tryout in the group decision procedure. As mentioned above, the leader in lecture and group decision was the same person.

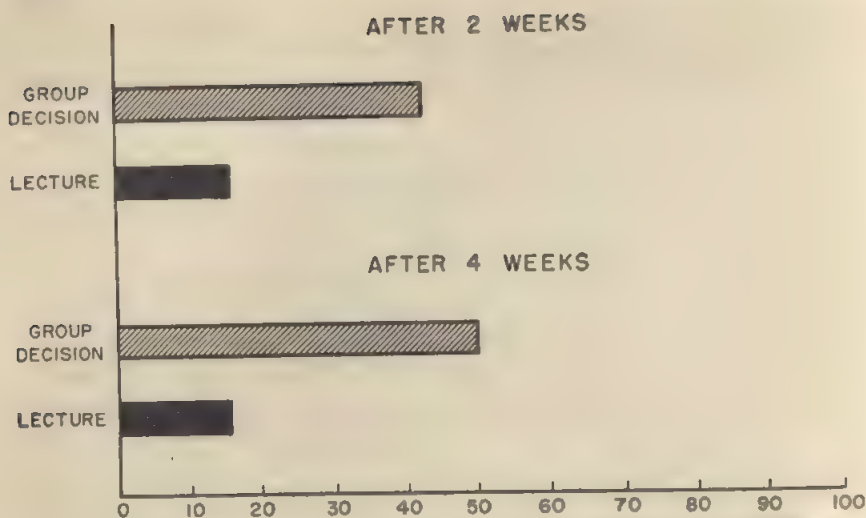


FIG. 21.2. Percentage of mothers reporting an increase in the consumption of fresh milk.

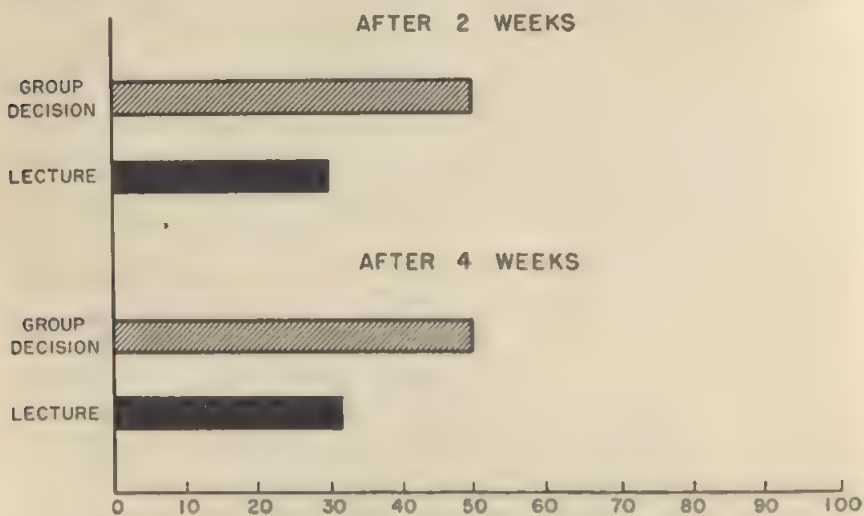


FIG. 21.3. Percentage of mothers reporting an increase in the consumption of evaporated milk.

2. The experiment shows that the different effectiveness of the two procedures is not limited to the foods considered in the first experiment.

3. It is interesting that the greater effectiveness of group decision was observable not only after one week, but after two and four weeks. Consumption after group decision kept constant during that period. After the lecture it showed an insignificant increase from the second to the

fourth week. The degree of permanency is obviously a very important aspect of any changes in group life. We will come back to this point.

4. As in the first experiment, the subjects were informed about a future checkup after group decision, but not after lecture. After the second week, however, both groups knew that a checkup had been made and neither of them was informed that a second checkup would follow.

5. It is important to know whether group decision is effective only with tightly knit groups. It should be noticed that in the second experiment the groups were composed of housewives who either lived in the same neighborhood or visited the nutrition information service of the community center. They were not members of a club meeting regularly as were the Red Cross groups in the first experiment. On the other hand, a good proportion of these housewives knew one another. This indicates that decision in a group setting seems to be effective even if the group is not a permanent organization.

### Individual Instruction versus Group Decision

For a number of years, the state hospital in Iowa City has given advice to mothers on feeding of their babies. Under this program, farm mothers who have their first child at the hospital meet with a nutritionist for from 20-25 minutes before discharge from the hospital to discuss feeding. The mother receives printed advice on the composition of the formula and is instructed in the importance of orange juice and cod liver oil.

There had been indication that the effect of this nutritional program was not very satisfactory. An experiment was carried out by Dana Klisurich under the direction of Marian Radke (7) to compare the effectiveness of this procedure with that of group decision.

With some mothers individual instruction was used as before. Others were divided into groups of six for instruction on and discussion of baby feeding. The manner of reaching a decision at the end of this group meeting was similar to that used in the previous experiments. The time for the six mothers together was the same as for one individual, about 25 minutes.

After two weeks and after four weeks, a check was made on the degree to which each mother followed the advice on cod liver oil and orange juice. Figures 21.4 and 21.5 show the percentage of individuals who completely followed the advice. The group decision method proved far superior to the individual instruction. After four weeks, every mother who participated in group decision followed exactly the prescribed diet in regard to orange juice.

The following specific results might be mentioned:

1. The greater effect of group decision in this experiment is particu-

larly interesting. Individual instruction is a setting in which the individual gets more attention from the instructor. Therefore, one might expect the individual to become more deeply involved and the instruction to be fitted more adequately to the need and sentiment of each individual. After all, the instructor devotes the same amount of time to one individual as he does to six in a group decision. The result can be interpreted to mean either that the amount of individual involvement is greater in group decision, or that the decision in the group setting is itself the decisive factor.

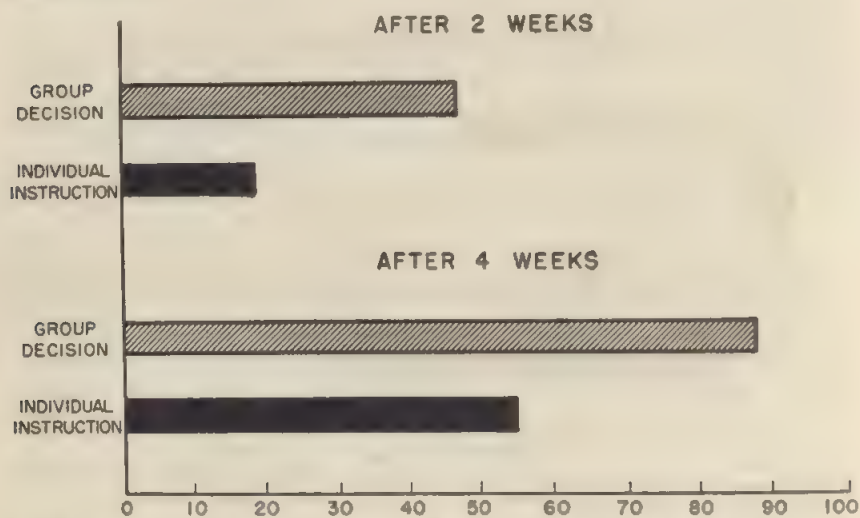


FIG. 21.4. Percentage of mothers following completely group decision or individual instruction in giving cod liver oil.

2. Most of the mothers were not acquainted with one another. They returned to farms which were widely separated. Most of them had no contact with one another during the following four weeks. The previous experiment had already indicated that the effectiveness of group decision did not seem to be limited to well-established groups. In this experiment the absence of social relations among the mothers before and after the group meeting is even more clear-cut.

3. The data thus far do not permit reliable quantitative, over-all comparisons. However, they point to certain interesting problems and possibilities. In comparing the various experiments concerning the data two weeks after group decision, one finds that the percentage of housewives who served kidneys, beef hearts or sweetbreads is similar to the percentage of housewives who increased the consumption of fresh milk or evaporated milk, or of the mothers who followed completely the diet of cod liver oil with their babies. The percentages lie between 32 and 50. The percentage



in regard to orange juice for the baby is clearly higher, namely, 85. These results are surprising in several aspects. Mothers are usually eager to do all they can for their babies. This may explain why a group decision in regard to orange juice had such a strong effect. Why, however, was this effect not equally strong on cod liver oil? Perhaps giving the baby cod liver oil is hampered by the mothers' own dislike of this food. Kidneys, beef hearts, and sweetbreads are foods for which the dislike seems to be

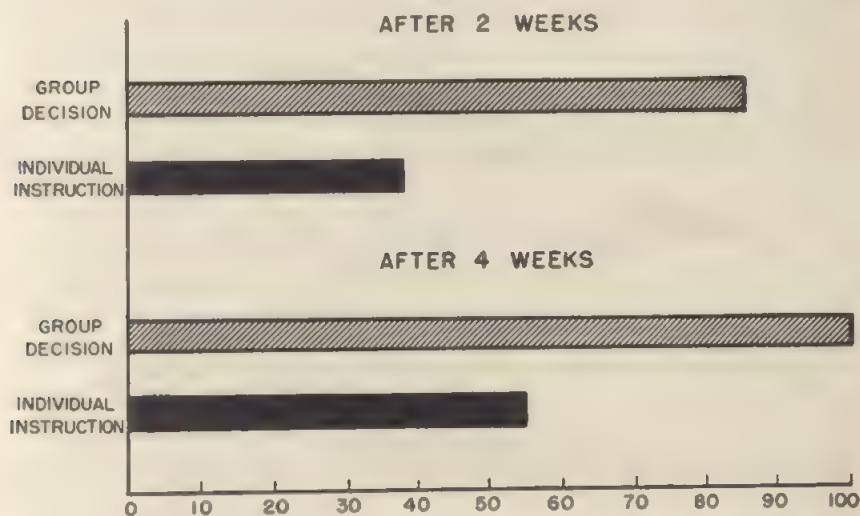


FIG. 21.5. Percentage of mothers following completely group decision or individual instruction in giving orange juice.

particularly deep-seated. If the amount of dislike is the main resistance to change, one would expect probably a greater difference between these foods and, for instance, a change in regard to fresh milk. Of course, these meats are particularly cheap and the group decision leader was particularly qualified.

4. The change after lectures is in all cases smaller than after group decision. However, the rank order of the percentage of change after lectures follows the rank order after group decision, namely (from low to high), glandular meat, fresh milk, cod liver oil for the baby, evaporated milk for the family, orange juice for the baby.

The constancy of this rank order may be interpreted to mean that one can ascribe to each of these foods (under the given circumstances and for these particular populations) a specific degree of "resistance to change." The "force toward change" resulting from group decision is greater than the force resulting from lecture. This leads to a difference in the amount (or frequency) of change for the same food without changing the rank

order of the various foods. The rank order is determined by the relative strength of their resistance to change.

5. Comparing the second and the fourth week, we notice that the level of consumption remains the same or increases insignificantly after group decision and lecture regarding evaporated or fresh milk. A pronounced increase occurs after group decision and after individual instruction on cod liver oil and orange juice, that is, in all cases regarding infant feeding. This seems to be a perplexing phenomenon, if one considers that no additional instruction or group decision was introduced. On the whole, one may be inclined to expect weakening effect of group decision with time, and therefore a decrease rather than an increase of the curve. To understand the problems involved, it is essential to formulate the question of condition of social change on a more theoretical level.

### Quasi-stationary Social Equilibria and the Problem of Permanent Change

*The objective of change.* The objective of social change might concern the nutritional standard of consumption, the economic standard of living, the type of group relation, the output of a factory, the productivity of an educational team. It is important that a social standard to be changed does not have the nature of a "thing" but of a "process." A certain standard of consumption, for instance, means that a certain action—making certain decisions, buying, preparing, and canning certain food in a family—occurs with a certain frequency within a given period. Similarly, a certain type of group relations means that within a given period certain friendly and hostile actions and reactions of a certain degree of severity occur between the members of two groups. Changing group relations, or changing consumption, means changing the level at which these multitudes of events proceed. In other words, the "level" of consumption, of friendliness, or of productivity is to be characterized as the aspect of an ongoing social process.

Any planned social change will have to consider a multitude of factors characteristic for the particular case. The change may require a more or less unique combination of educational and organizational measures; it may depend upon quite different treatments or ideology, expectation and organization. Still, certain general formal principles always have to be considered:

*The conditions of stable quasi-stationary equilibrium.* The study of the conditions for change begins appropriately with an analysis of the conditions for "no change," that is, for the state of equilibrium.

From what has just been discussed, it is clear that by a state of "no social change" we do not refer to a stationary, but to a quasi-stationary

equilibrium; that is, to a state comparable to that of a river which flows with a given velocity in a given direction during a certain time interval. A social change is comparable to a change in the velocity or direction of that river.

A number of statements can be made in regard to the conditions of quasi-stationary equilibrium. These conditions are treated more elaborately elsewhere (5).

1. The strength of forces which tend to lower that standard of social life should be equal and opposite to the strength of forces which tend to raise its level. The resultant of forces on the line of equilibrium should therefore be zero.

2. Since we have to assume that the strength of social forces always shows variations, a quasi-stationary equilibrium presupposes that the forces against raising the standard increase with the amount of raising, and that the forces against lowering increase (or remain constant) with the amount of lowering.

3. It is possible to change the strength of the opposing forces without changing the level of social conduct. In this case the tension (degree of conflict) increases.

*Two basic methods of changing levels of conduct.* For any type of social management, it is of great practical importance that levels of quasi-stationary equilibria can be changed in either of two ways: by adding forces in the desired direction, or by diminishing opposing forces. If a change from the level  $L_1$  to  $L_2$  is brought about by increasing the forces toward  $L_2$ , the secondary effects should be different from the case where the same change of level is brought about by diminishing the opposing forces.

In both cases the equilibrium might change to the same new level. The secondary effect should, however, be quite different. In the first case, the process on the new level would be accompanied by a state of relatively high tension; in the second case, by a state of relatively low tension. Since increase of tension above a certain degree is likely to be paralleled by higher aggressiveness, higher emotionality, and lower constructiveness, it is clear that as a rule the second method will be preferable to the high pressure method.

The group decision procedure which is used here attempts to avoid high pressure methods and is sensitive to resistance to change. In the experiment by Bavelas on changing production in factory work (as noted below), for instance, no attempt was made to set the new production goal by majority vote because a majority vote forces some group members to produce more than they consider appropriate. These individuals are likely to have some inner resistance. Instead a procedure was followed by which a goal was chosen on which everyone could agree fully.

It is possible that the success of group decision and particularly the permanency of the effect is, in part, due to the attempt to bring about a favorable decision by removing counterforces within the individuals rather than by applying outside pressure.

The surprising increase from the second to the fourth week in the number of mothers giving cod liver oil and orange juice to the baby can probably be explained by such a decrease of counterforces. Mothers are likely to handle their first baby during the first weeks of life somewhat cautiously and become more ready for action as the child grows stronger.

*Social habits and group standards.* Viewing a social stationary process as the result of a quasi-stationary equilibrium, one may expect that any added force will change the level of the process. The idea of "social habit" seems to imply that in spite of the application of a force the level of the social process will not change because of some type of "inner resistance" to change. To overcome this inner resistance, an additional force seems to be required, a force sufficient to "break the habit," to "unfreeze" the custom.

Many social habits are anchored in the relation between the individuals and certain group standards. An individual  $P$  may differ in his personal level of conduct ( $L_p$ ) from the level which represents group standards ( $L_{gr}$ ) by a certain amount. If the individual should try to diverge "too much" from group standards, he would find himself in increasing difficulties. He would be ridiculed, treated severely and finally ousted from the group. Most individuals, therefore, stay pretty close to the standard of the groups they belong to or wish to belong to. In other words, the group level itself acquires value. It becomes a positive valence corresponding to a central force field with the force  $f_p$ , keeping the individual in line with the standards of the group.

*Individual procedures and group procedures of changing social conduct.* If the resistance to change depends partly on the value which the group standard has for the individual, the resistance to change should diminish if one diminishes the strength of the value of the group standard or changes the level perceived by the individual as having social value.

This second point is one of the reasons for the effectiveness of "group-carried" changes (6) resulting from procedures which approach the individual as part of face-to-face groups. Perhaps one might expect single individuals to be more pliable than groups of like-minded individuals. However, experience in leadership, training, in changing of food habits, work production, criminality, alcoholism, prejudices, all indicate that it is usually easier to change individuals formed into a group than to change any one of them separately (3). As long as group standards are unchanged, the individual will resist changes more strongly the farther he is to depart from group standards. If the group standard itself is changed, the re-



sistance which is due to the relation between individual and group standards is eliminated.

*Changing as a three-step procedure: unfreezing, moving, and freezing of a level.* A change toward a higher level of group performance is frequently short lived; after a "shot in the arm," group life soon returns to the previous level. This indicates that it does not suffice to define the

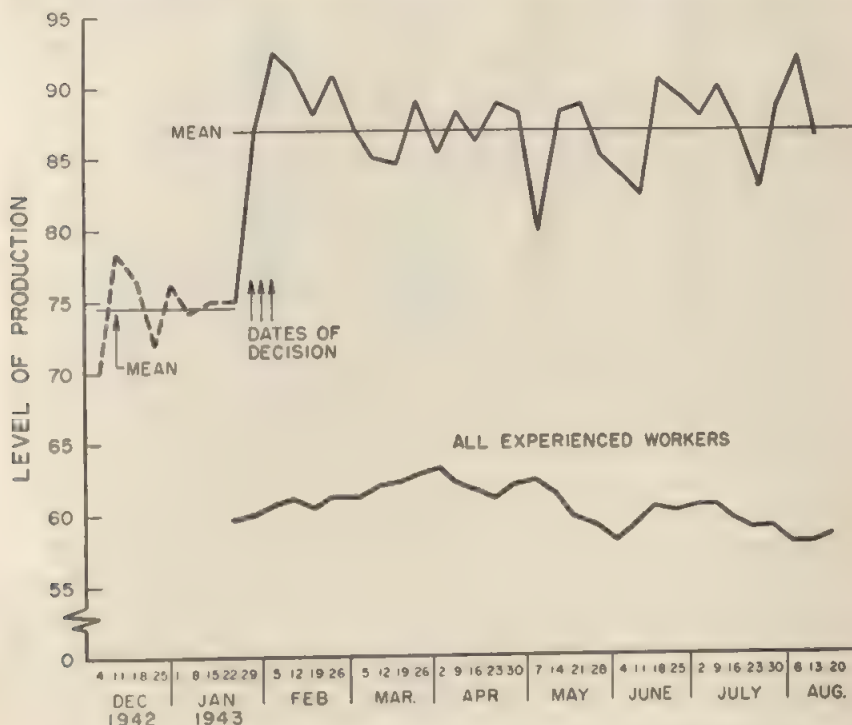


FIG. 21.6. Effect of group decision on sewing-machine operators.

objective of a planned change in group performance as the reaching of a different level. Permanency of the new level, or permanency for a desired period, should be included in the objective. A successful change includes therefore three aspects: unfreezing (if necessary) the present level  $L_1$ , moving to the new level  $L_2$ , and freezing group life on the new level. Since any level is determined by a force field, permanency implies that the new force field is made relatively secure against change.

The "unfreezing" of the present level may involve quite different problems in different cases. Allport (1) has described the "catharsis" which seems to be necessary before prejudices can be removed. To break open the shell of complacency and self-righteousness, it is sometimes necessary to bring about an emotional stir-up deliberately.

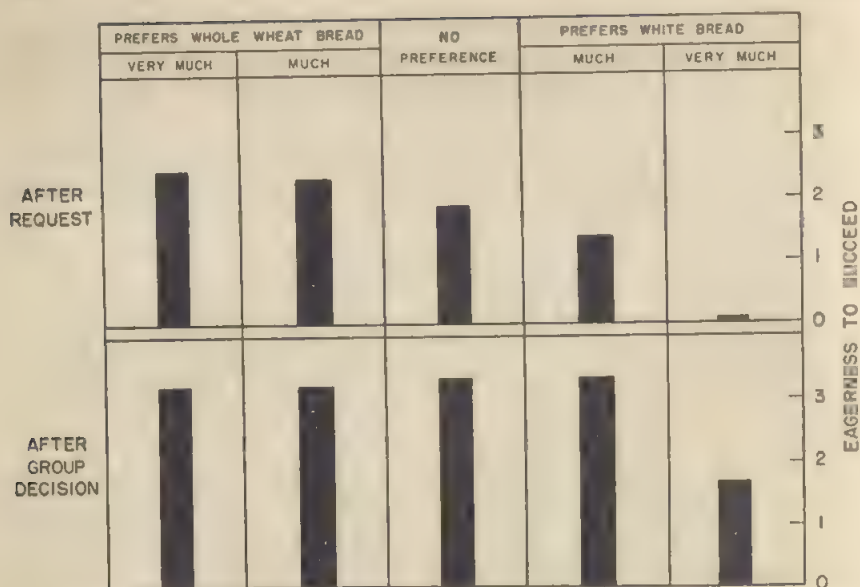


FIG. 21.7. Relation between own food preferences and eagerness to succeed.

Figure 21.6 presents an example of the effect of three group decisions of a team in a factory studied by Bavelas (6) which illustrates an unusually good case of permanency of change measured over nine months.

The experiments on group decision reported here cover but a few of the necessary variations. Although in some cases the procedure is relatively easily executed, in others it requires skill and presupposes certain general conditions. Managers rushing into a factory to raise production by group decisions are likely to encounter failure. In social management as in medicine, there are no patent medicines and each case demands careful diagnosis.

One reason why group decision facilitates change is illustrated in a study done by Willerman (2). Figure 21.7 shows the degree of eagerness to have the members of a students' eating cooperative change from the consumption of white bread to whole wheat. When the change was simply requested, the degree of eagerness varied greatly with the degree of personal preference for whole wheat. In case of group decision the eagerness seems to be relatively independent of personal preference; the individual seems to act mainly as a "group member."

### Summary

Group decision is a process of social management or self management of groups. It is concerned with the relation between motivation and action, and between the individual and the group.

Experiments are reported in which certain methods of group decision prove to be superior to lecturing and individual treatment as means of changing social conduct.

The effect of group decision can probably be best understood by relating it to a theory of quasi-stationary social equilibria, to social habits and resistance to change, and to the various problems of unfreezing, changing, and freezing social levels.

#### REFERENCES

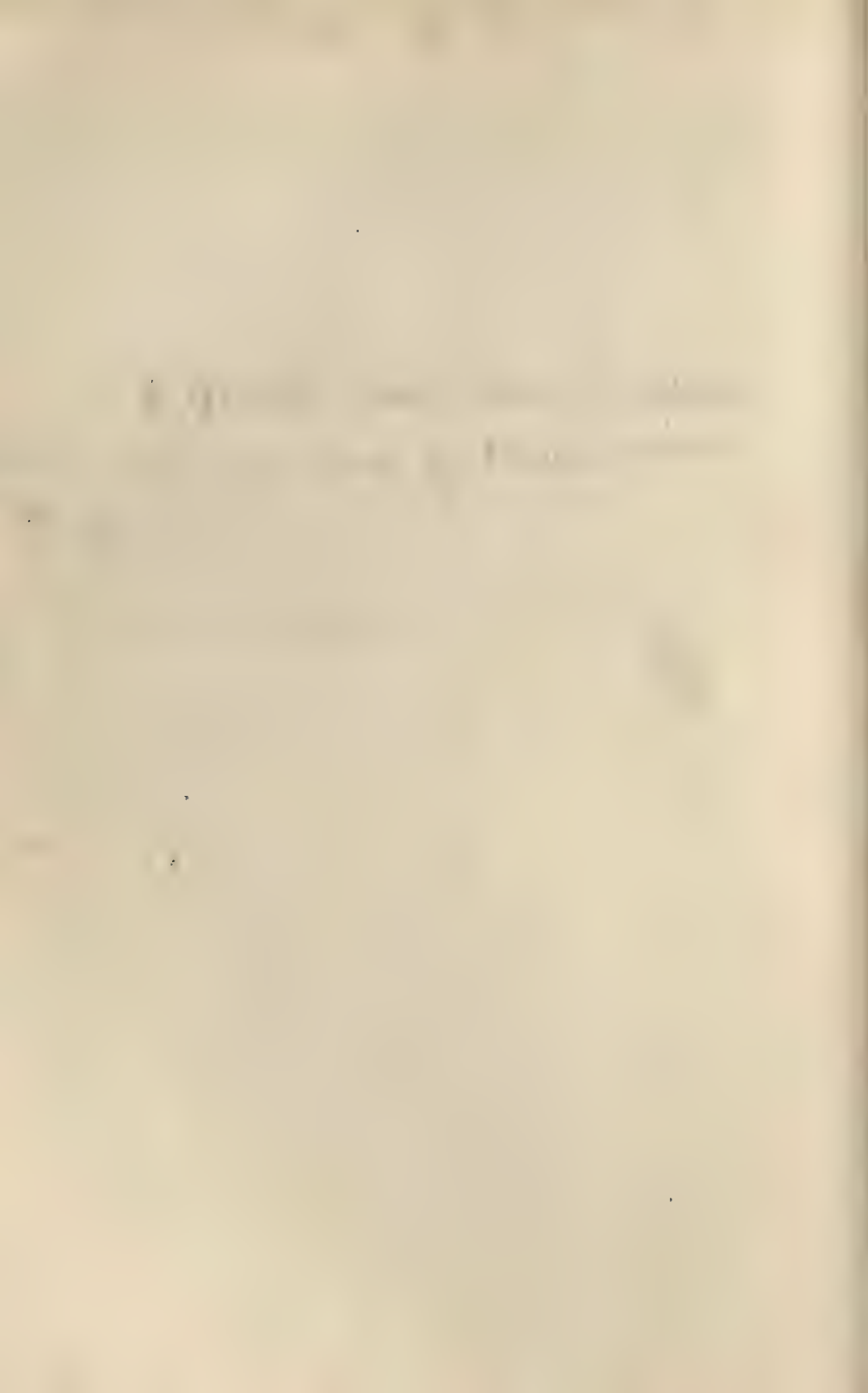
1. Allport, G. Catharsis and the reduction of prejudice. *Journal of Social Issues*, 1945, 1, No. 3, 3-10.
2. Lewin, K. Forces behind food habits and methods of change. *Bulletin of the National Research Council*, 1943, 108, 35-65.
3. Lewin, K., & Grabbe, P. (Eds.) Problems of re-education. *Journal of Social Issues*, 1945, 1, No. 3.
4. Lewin, K. Behavior and development as a function of the total situation. In L. Carmichael (Ed.), *Manual of child psychology*. New York: Wiley, 1946.
5. Lewin, K. Frontiers in group dynamics. *Human Relations*, 1947, 1, 5-42.
6. Maier, N. R. F. *Psychology in industry*. Boston: Houghton-Mifflin, 1946.
7. Radke, Marian, & Klisurich, Dana. Experiments in changing food habits. *Journal of the American Dietetics Association*, 1947, 23, 403-409.





**Part Four**

**GROUP GOALS AND GROUP LOCOMOTION**



## Group Goals and Group Locomotion: Introduction

Everyone has belonged, at one time or another, to a group that never seemed to "get anywhere." We have all experienced, too, groups with clear purposes and effective means for reaching them. People are ordinarily quite sensitive to this feature of group functioning, which Chester Barnard (1) has called "the effectiveness of cooperative effort." If a group has clear goals and if it is effective in reaching them, personal satisfaction of members and group morale are usually high.

Practical-minded administrators and group leaders necessarily have to employ working hypotheses about the determinants of group effectiveness. They have to take actions every day which they hope will give their groups better unity of purpose and make them better able to achieve their goals. If we were to collect these working hypotheses from a representative sample of group leaders—administrators in business or government, ministers, labor leaders, group workers, teachers, officers of clubs, or what have you—we would have a long and confusing list. After accounting for differences in terminology, however, we should probably find that most of these hypothesized determinants of group effectiveness could be subsumed under one or more of the following headings:

1. the extent to which a clear goal is present
2. the degree to which the group goal mobilizes energies of group members behind group activities
3. the degree to which there is conflict among members concerning which one of several possible goals should control the activities of the group
4. the degree to which there is conflict among members concerning means that the group should employ in reaching its goals
5. the degree to which the activities of different members are coordinated in a manner required by the group's tasks
6. the availability to the group of needed resources, whether they be economic, material, legal, intellectual, or other.

In addition to these determinants the list would also certainly contain many items specifying required group structures and processes, such as effective communication, competent leadership, clear lines of authority, and participation in decisions.

That determinants broadly of this nature do, in fact, greatly influence the effectiveness of group actions can hardly be denied. Successful group leaders undoubtedly deal with such determinants in their work with groups. But if we press more deeply by asking our experts just exactly what they mean by the terms they use and precisely how they work with these determinants, we find much disagreement and little indisputable evidence for the views expounded.

The ultimate task of social science in this field, and the secret of the contribution it can make, consists of examining the phenomena in question in such a manner that unequivocal conclusions can be drawn concerning what conditions do, in fact, lead to what consequences under what circumstances. In such an examination the scientist must, of course, designate clearly just what phenomena are to be brought together under one problem area. He must also establish a set of terms or concepts to be employed in describing the phenomena. And he must adopt rules to be followed in attaching his concepts to specific observations and measurements. This process of designating a scientific problem area and of establishing useful descriptive language for it is one of the most difficult. Unfortunately, the study of the dynamics of group effectiveness is still largely concerned with this preliminary phase of research.

We must begin, then, with some rather elementary questions. What do we mean when, in everyday language, we assert that a group does or does not "get somewhere" or "accomplish something"? These terms seem to imply that a group can be said to have a location, that it may change its location from time to time, and that certain locations are preferred by all or some segment of the members to other locations. Thus, if a group does not "get anywhere," one would assume either that it remained in the same location or that any change of location accomplished was not to a more preferable position. If, on the other hand, a group meeting or other group activity did make progress and did "get somewhere," one would assume that the group had changed its location to a more desirable position.

These rather vaguely conceived notions of "location" and of "preferred location" help us designate a class of phenomena for further analysis and empirical investigation. Whenever it is possible to assert that some location is relatively the most preferred for a group and that a sequence of efforts to change the position of the group will terminate when that location is reached, we shall designate that location as the group's goal. Whenever the group changes its location, we shall speak of group locomotion.

With these concepts we may ask concerning any group at any given time (a) whether, or to what degree, it has a goal, (b) whether it has more than one goal, and, if so, whether these goals are compatible or conflicting.



(c) whether as a result of some group activity group locomotion has occurred; and (d) whether any given locomotion was toward or away from the group's goal. If we are able to answer such questions as these, that is to say, if we can determine in a specific situation whether a group has made progress toward its goal, then we may ask the scientifically more interesting question of what conditions in general facilitate or inhibit the establishment of group goals of various kinds, and what conditions help or hinder a group's locomotion toward its goals. Furthermore, we may then examine the relations of individual members to these group phenomena: How do goals of individuals become "converted" into group goals? Under what conditions do individuals accept (or reject) group goals and guide their actions by the nature of these goals? What characterizes actions by individuals that result in a group locomotion? What characteristics of interaction among people result in group locomotion under specified conditions?

In our discussion of the concept of group goal we have assumed that it is possible to treat a group as an undifferentiated entity, at least as a first approximation. This approach leaves open, of course, many questions of *how* the processes involved work, but it does permit us to proceed with analysis and research before all the details are worked out. In practice, moreover, this assumption often does not seem farfetched. For example, in a conference it is possible to assert that an official agenda specifies at least part of the goals of the group. Or, to take another example, a fund-raising committee may be quite explicit that its goal is to collect a certain sum of money by a certain date. Here it is even possible to indicate progress or distance traversed toward the goal at any given time. Shartle (12) reports, on the basis of extensive research in formal organizations, that most such organizations possess written statements regarding goals. These are found in such documents as by-laws, minutes, progress reports, and financial statements. Moreover, he has found that responsible executives can state their perceptions of the goals of the organization and the degree of progress made toward them at any given time. He proposes that it will be possible to construct a *goal achievement index* which denotes the ratio of the total distance to the goal in relation to the amount of progress that has been achieved. It must be added, however, that the methodological difficulties of constructing such an index quantitatively have not yet been overcome.

The treatment of groups as undifferentiated entities which can be located in relation to their goals has proved useful in several experimental studies of groups under laboratory conditions, although in most of these experiments the concepts of group goal and group locomotion have not been explicitly used as such. One of the earliest experiments in this field may serve as an example. Shaw (13) gave problems to groups of

four cooperating subjects to be solved by the group. She was interested in comparing the efficiency of these groups to that of individuals working on the same problems alone. Here it is possible to conceive of the solution of the problem as being the group's goal. Her conclusion was that groups made better progress than did individuals. Although she made no detailed study of how the group made progress toward its goal, she did observe that individuals tended to take on different functions, and the superiority of the groups appeared to result from better checking on mistakes by group members than by individuals working alone. In a more recent experiment, Leavitt (6) assigned group tasks to groups of various types and had each group repeat its performance several times. He was in this way able to construct learning curves for the group which showed the time required for the group to reach its goal (rate of group locomotion) as related to the number of times the task had been repeated. The major conclusion of this experiment is that different communication channels within groups result in different levels of effectiveness and different rates of learning.

It should be noted, in passing, that the notion of group goal need not be restricted to openly agreed upon goals (although these certainly present fewer methodological problems in research). Some investigators approaching the study of groups from a psychoanalytic background propose that groups, per se, may have goals not overtly expressed by members. Bion and Ezriel (3, 5) have described such phenomena in groups organized for purposes of individual therapy. Even more generally it would appear that the intuitive notion of a "hidden agenda" is quite meaningful but, admittedly, extremely difficult to define and measure.

### ***Four Conceptions of Group Goals***

In studying the phenomena of group goals and group effectiveness it is essential that we be as clear as possible concerning the basic meaning of the concept *group goal*. The approach to the problem outlined here proposes that the formal properties of group goals and those of individual goals are not fundamentally different. That is to say, just as in respect to individuals, group activities are motivated by needs in such a way that they are directed toward goals. Moreover, such activities cease when the goal is reached. Attempts which have been made to work out this approach in detail and with rigor have been frustrated sooner or later by failure to solve the perplexing problem of how to link individual goals with group goals in a conceptually satisfactory manner. Perhaps this difficulty will be reduced somewhat if we attempt to classify different ways in which this linkage may be attempted.

1. *Group goal as a composite of similar individual goals*. It has fre

quently been proposed that *group goal* can have strict meaning only as the sum of similar individual goals. In its simplest form, however, this conception seems most unsatisfactory. Three young men all desiring to marry the same young lady might be said to have highly similar goals (or even an identical goal) and yet one would hardly assert that a group goal of marrying the lady were present. Or, the members of a committee might each individually want to get home after a long day of meetings, but it would not seem useful to assert that the committee had a goal of going home. Thus, similarity of individual goals is not sufficient to form a group goal. To overcome this deficiency, it is sometimes asserted that if similar individual goals are *shared*, they constitute a group goal. This additional requirement does appear to make the conception more acceptable, but it is exceedingly difficult to provide a definition of sharing that is rigorous and, at the same time, a satisfactory part of the intuitive meaning of group goal. Consider, for example, a definition of *shared individual goals* which conveys the meaning that each individual realizes that each other individual has the same or similar goals. Now, if we return to the two examples just noted, we see that we have hardly improved the conception by adding the requirement that the individual goals be shared. The three young men would not become a group with a group goal merely as a result of learning that each wanted to marry the same lady. In the second example, it is undoubtedly true that the committee might function differently and even change its goals as a result of a common realization that each member wanted to go home, but it strains the conception of a group goal to hold that, even when each committee member is fully informed of the goals of the other, the goal of the committee automatically becomes one of "going home." Finally, it should be noted that a group goal may sometimes exist when there appears to be no substantial similarity among the individual goals of the members. An illustration of this situation is provided by three boys who embarked upon a single enterprise of constructing a stand to sell lemonade. One boy's goal was to make enough money to buy a baseball glove. The second boy was solely interested in using the carpentry tools he had just received for his birthday. The third boy was motivated to join in and even do the disagreeable chores because ordinarily the other two would not allow him to play with them. Despite these rather dissimilar personal goals, the three boys did successfully complete the group enterprise, and presumably we should assert that a group goal existed.

2. *Group goal as individual goals for the group.* A more promising conception of group goal is suggested if we start with a phenomenological analysis of how the situation looks to an individual member of a group. From the individual member's point of view, it is clear that he characteristically has goals for his group. As a member of a fraternity he wants the



fraternity to pledge the most desirable members of the freshman class. As a member of the Rotary club he thinks that it should embark upon a program of raising funds for crippled children. Certainly he experiences satisfaction or frustration as a result of actions taken by his group depending upon how they affect the group's position in respect to these goals. These considerations suggest, then, that a group goal might be conceived of as some sort of composite of *individual goals for the same group*. Careful examination of this conception shows that it has many advantages. It lends itself, for example, to operational definition: to determine the group goal one would determine the degree of consensus among reports of members about their goals for the group. It provides, also, a clear conceptual method for linking such group variables as group locomotion or group structure to individual variables of motivation, perception, and learning. The major weakness of this conception is that by itself it is limited to consciously reportable variables. By itself it cannot handle unconscious group goals or hidden agenda. Furthermore, many difficulties arise when one attempts to specify just how various individual goals for the group are to be combined into a single group goal. Is unanimity required, or a simple majority, or do the goals of leading members have more weight? A fully satisfactory conception of group goal will have to take into account actual interdependencies among members of the group.

3. *Group goal as dependent upon a particular interrelation among motivational systems of several individuals.* The third approach to this problem has focused upon the motivational tension systems of individuals rather than their external goals. It calls attention to the fact that two or more people may be related to each other in such a way that a particular action by one reduces the need tensions of the others. Our earlier example of the three boys who constructed a lemonade stand can serve to illustrate this view. When one of the boys sawed wood he provided need satisfaction to all three of them because this activity advanced each to his own separate personal goal. Because the boys' needs were interdependent in a particular way, certain actions could be carried out by each boy which would result in a reduction of the need tensions of all. This type of motivational interdependence has been studied by Lewis (7) and Lewis and Franklin (8) in some ingenious laboratory experiments. Lewis proposed that when two or more people work together on a single task each may take a *task orientation* or an *ego orientation*. In cooperative work people are more likely to take a task orientation with the result that each person shows relatively little concern over *who* actually performs the task. The mere fact that the task is completed is a sufficient condition for the release of need tension in both. The ego orientation, in contrast, requires that the person perform the task himself if need tension is to be



released. In studies employing the Zeigarnik method for determining the presence of need tension, these investigators demonstrated clearly that the two orientations to the task do produce different kinds of interdependence between the need systems of the two subjects. Deutsch (Chap. 23) has extended this line of reasoning to apply to the concept of group goal. He proposes that when several people are interrelated so that the activity of one reduces the need tensions of others they may be said to have a group goal. It should be clear that this approach has considerable merit, though several problems remain unsolved. It supplements the conception of group goal as a composite of *individual goals for the group* by specifying the conditions necessary for "converting" individual tension systems into a group system. It does not specify, however, how a particular group goal becomes selected nor how a given goal steers the activities of group members.

4. *Group goal as an inducing agent.* A complete conception of group goal will have to account for still other features of the group motivational situation. In order to account for the fact that a group goal can steer the behavior of group members to perform certain activities rather than others, it is necessary to recognize that the group goal can be a source of influence upon group members. Once a particular group goal has been established, "good" group members are expected to work toward its attainment even when their preferred goal has not been chosen. In actual fact, of course, various group members are influenced to various degrees by various group goals. For this reason, a satisfactory conception of group goal must recognize that a group goal can induce motivational forces upon members and that the magnitude of such influence can vary quantitatively among goals and among members. It is an important empirical problem to discover the determinants of such influence.

Let us turn now to two different laboratory experiments and analyze them in terms of these four conceptions of group goal. Consider, first, a study by Rosenthal and Cofer (11) which was designed to investigate the effects of an indifferent member upon group performance. The experimental situation consisted of having four or five people come together and engage in a dart throwing game. The subjects were told that the total score of the group was the only important aspect of the situation, and they were encouraged to help one another. The group score was simply the sum of the individual scores. To the extent that an individual subject accepted the experimental task, he attempted to make as high a score as possible in his own individual throws. In a certain sense, then, it would seem that this was a situation characterized under the first conception of group goals: each member had an individual goal of making a high score on his own throws, and these goals were similar for all members. It should be noted, however, that the method of calculating the group score

placed the members' performance in a particular kind of interdependence. If one member performed well, he contributed to the group's achievement of its goal. One would expect, therefore, that each member would experience satisfaction or frustration as a result of each other's performance, producing a situation of the kind characterized under the third conception of group goal. After a certain number of throws each member was asked to indicate the score he expected himself to get on his next throws and the score he expected the group to get on the next total set of throws. This latter statement would appear to be a description of the member's goal for his group, reflecting the situation characterized under the second conception of group goal. Twice during the experiment the group was asked to discuss and to agree upon an acceptable score for the group on its next performance. How does such a publicly shared and explicitly determined group goal differ from a collection of individual goals for the group? One might expect the presence of such a goal to heighten the interdependence of member goals. This publicly agreed upon goal might now be expected to influence member behavior to an extent determined by the member's relation to the group. Although Rosenthal and Cofer do not explore this aspect of the situation, it appears that the public setting of a level of aspiration for the group may well have set up a group goal characterized under the fourth conception listed above. Once established, it might be expected to induce forces on members of the group, and the magnitude of the influence would be expected to vary with such things as the degree to which the member was attracted to the group.

On the basis of a distinction essentially like that made here between the first and third conceptions of group goals, Mintz (9) has developed a theory to account for panics and other forms of nonadaptive group behavior. He points out that many social situations are structured so that intelligent or adaptive behavior requires the coordination of individual actions. In such situations, he reasons, if the individuals have purely personal motivations the end-result may be seriously maladapted behavior. In keeping with this reasoning, he set up an experimental situation in which groups of 15 to 21 subjects attempted simultaneously to pull cones out of a bottle. The neck of the bottle was such that the cones would become jammed if too many were forced through at the same time. For some of the groups he offered rewards to the individuals who performed most efficiently. In other groups he offered to reward the group which cooperated best on the task. It would seem that the individuals in the first type of group had similar and shared individual goals (the first conception of group goal). Individuals in the second type of group had goals which were related to one another in a rather different way. Here, the individual's goal was to get the group's performance up. In this setting one individual experienced satisfaction if another extracted his

come from the bottle (the third conception of group goal). The experiment revealed that traffic jams, or maladaptive behavior, occurred much more frequently in groups of the first type. We shall see a similar type of conclusion in Chapter 24 where Fouriez, Hutt, and Guetzkow report how self-oriented behavior in decision-making conferences reduces the productivity of such conferences.

These illustrative studies should make it clear that all four conceptions of group goal refer to real empirical phenomena. As a basis for defining the term *group goal*, however, the first conception is by far the least satisfactory: the sheer similarity of individual goals, even when shared, hardly provides the basis for asserting the existence of a group goal. It should be noted, nonetheless, that greater or lesser similarities of individual goals probably influence in actual fact the degree to which group goals do become established and the amount of influence they will have over members. Nor is the second conception fully satisfactory as a basis for defining group goal. It, too, refers to an important aspect of the problem, since individual goals for the group do clearly affect group functioning. When all, or some significant portion, of the members of a group have the same goal for a group, it is likely that this goal will in fact become a group goal. And once a group goal is established, the acceptance of it by the members is important for effective group action toward the goal. The remaining two conceptions provide a much more promising basis for a definition of group goal. An eventually satisfactory definition will undoubtedly recognize that a group goal (*a*) is related to a set of member tension systems which are mutually interdependent in their arousal and release, and (*b*) exerts influence over group members so as to activate and steer their behavior.

### *Member Activities and Group Locomotion*

Practical experience makes it abundantly clear that all activities carried out by group members do not result in the same amount of group progress. In a discussion group long periods of interaction may appear to get the group nowhere, while a properly chosen comment may bring the group to a solution of its problem in one step. Or, a fund-raising organization may make no progress in its campaign until one particular member uses his influence to get the community's leading citizen to make a contribution. Each group goal appears to have associated with it a set of required group functions, and unless member activities contribute to the performance of these functions group locomotion cannot take place.

Unfortunately, relatively little research has yet been devoted to analyzing the relationships between group goals and the associated group functions. Before such research can be profitably undertaken it is necessary



to gain some conceptual clarification regarding the nature of *group functions*. A stimulating contribution toward this end has been made by Benne and Sheats (2) in their analysis of *functional roles* characteristically found in discussion groups. These authors distinguish three types of functions: (a) those associated with group locomotion toward group goals, (b) those contributing to the maintenance of the group, and (c) those whose objective is the attainment of personal goals of individuals. Examples of the first type are such functions as seeking information, giving information, evaluating, recording, and the like. Group maintenance functions include such activities as encouraging, harmonizing, and expediting communication. Among the individual functions are such things as expressing aggression, seeking recognition, seeking personal help, and pleading for special interests. As a discussion group proceeds through different phases in solving a problem or as it turns from one type of task to another, the required functions may change, and efficiency can be achieved only by groups that are able to adapt flexibly to these changing functional requirements.

Bales and Strodtbeck (Chap. 26) have conducted a number of ingenious experiments demonstrating that problem-solving groups do, in fact, pass through a sequence of phases. These phases are defined in terms of problem-solving functions rather similar to those suggested by Benne and Sheats. Further research is now needed to determine what functions are optimal for the attainment of goals of various kinds.

In passing, it should be noted that current conceptions of leadership stress the functional aspects of "leading." In this view the "true" leader (whether or not officially designated as such) is the person who performs effectively certain functions which contribute to group locomotion and group maintenance. The "situational approach" to leadership points out that as group goals and group composition change the leadership functions required also change. Carter and Nixon (4) conclude from their research on this problem that the skills required of the leader are both specific and general. It appears that many of the group-maintenance functions remain reasonably constant and that a person who is skillful in performing them will be an effective leader under a wide range of circumstances. On the other hand, many of the group-locomotion functions are rather specific to particular tasks or families of tasks, and the same person may not be equally effective with respect to all of them.

Group locomotion, then, depends upon the performance of group functions by one or more members. Ordinarily, a whole set of functions must be performed and these must be coordinated so that they harmoniously contribute to an integrated pattern of functions. This requirement means, among other things, that each individual member must have his actions motivated and steered by the group goal and its associated func-



tions. Certain features of this process have been studied experimentally.

In highly centralized and autocratically organized groups the steering of member behavior toward group functions is mediated largely through directions from the official leader. As long as the leader has means at his disposal to control the behavior of the others, resulting group effectiveness may be high. Just how high it is will depend largely upon the competence of the leader. There is reason to believe, however, that when functions are performed under direction from authority rather than from more direct acceptance of group goals members display less spontaneity and creativity in their behavior. A dramatic illustration of this point was provided by White and Lippitt (see Chap. 40) in their study of autocratic, democratic, and laissez-faire leadership of children's groups. When the autocratic leader left the room group activities quickly disintegrated. But when the democratic leader (who had taken great pains to have members develop group goals) was out of the room work continued without interruption.

In a quite different sort of study, Horwitz (see Chap. 25) found great individual differences in the degree to which subjects accepted the group's decision concerning its goal. He found also that those who most fully accepted the group goal displayed most strongly need tensions to have the group achieve its goal. Those who merely acquiesced mobilized less need tension related to group achievement. Those who rejected the group decision tended to persist in their personally determined motivation. These findings make it clear that when a group goal is not fully accepted by the members it will have little power to influence the behavior of the members, and we should expect to find relatively poor coordination of efforts and a relatively high incidence of self-oriented rather than group-task oriented behavior.

The power of the group to get members to accept group goals and to perform group functions depends largely upon the degree to which members are attracted to membership in the group (see Chaps. 11 and 15). Although it is not definitely known whether all kinds of attraction to a group have precisely the same effects upon the power of the group, there is good reason to believe that groups whose members like one another as people, groups that mediate personal need satisfaction, and groups having high prestige can all exert strong pressures upon members to accept group goals. Given correct knowledge about the nature of the required functions, such groups should perform with relatively good effectiveness.

People who show a strong sense of responsibility to a group seem particularly willing to be motivated by needs of the group and to have their activities steered in the light of needed group functions. Many different factors probably contribute to the development of a sense of responsibility to a group. It would seem, for instance, that the more a

person wants to belong to a group the more he will feel responsible to the group. Various personal values, needs, and attitudes would also seem to heighten this sense of responsibility. In one laboratory experiment, conducted by Pepitone (10), the perceived importance of the subject's functional role was shown inferentially to determine the subject's sense of responsibility to the group. In this experiment groups were constructed so as to have two different functional roles—planning a design and sorting pieces to be used in the design. The performance of members in the sorting role was studied under three conditions. In the condition of "high importance" the task of sorting was described as being of much greater importance to completing the total job than was the task of planning. In the condition of "medium importance" the two tasks were described as being of equal importance. And in the condition of "low importance" sorting was described to subjects as being of much less importance than the task of planning. If these three degrees of perceived importance of the function did in fact produce different degrees of responsibility to the group, one would expect the quality of performance to vary in a corresponding fashion. The actual experimental findings do confirm this expectation: those subjects who perceived the function of sorting as being of high importance sorted a larger number of pieces and made fewer errors than did those who believed their function to be of less importance. The practical implications are far-reaching for all types of groups.

### ***Overview of Research Reported in this Section***

The five chapters which follow take up a series of special problems related to group effectiveness. Each one presents empirical evidence relevant to a particular aspect of a general theory of group goals and group locomotion.

In Chapter 23 Deutsch begins by defining the concepts *cooperation* and *competition*. The basic contribution of this analysis is the introduction of the concept of two fundamental types of interdependence among members of a group. According to Deutsch, the cooperative social situation is one in which the goals of the individuals are so related to each other that a goal can be achieved by any one only if all the individuals can also achieve their respective goals. The competitive situation is essentially the opposite. In this situation if one member reaches his goal, the others will to some degree be unable to reach their goals. Deutsch proposes, as we have above, that the existence of a group goal implies the cooperative type of interdependence among group members. He then attempts, from these definitions and from other assumptions, to make predictions about differences in group functioning and interpersonal

relations in the two kinds of situations. One essential step in the derivation is the assertion that in the cooperative situation (or where a group goal exists) there will develop (a) a readiness to substitute one member's activities for another's, since each person's activity is evaluated not by who does it but by its contribution to progress toward the goal; (b) a cathexis, or attraction of members for one another, since each contributes to the other's progress toward the goal (even when striving for his own satisfaction); and (c) a readiness to accept influence attempts from other members, since all see that they are helping one another. Following this line of reasoning further, Deutsch makes a series of predictions about the effects of cooperation and competition upon various features of group organization, motivation of members, and effectiveness of group functioning. These predictions are then given an empirical test in a classroom setting. The implications of this theoretical approach are far-reaching and should be tested in a wide variety of situations.

Using slightly different terminology, but examining essentially similar phenomena, Fouriez, Hutt, and Guetzkow develop the notion of self-oriented needs in connection with their study of 72 decision-making conferences (Chap. 24). They conceive of self-oriented behavior as that which is guided by personal needs regardless of the consequences for attainment of the group goal. Although their distinction is not precisely the same as that between cooperation and competition, it is quite similar. Their empirical findings, moreover, are essentially the same as those reported by Deutsch.

The experiment reported by Horwitz in Chapter 25 explores more specifically the way in which group goals may influence the motivation of group members. Employing the Zeigarnik technique for detecting the presence of a need tension in an individual, he examines the influence of overt goal setting by a group upon the need systems of individual members. Of special interest are his situations in which personal goals for the group come into conflict with the goals overtly chosen by the group. This study makes an important contribution to our understanding of some of the motivational consequences of group membership.

The problem of isolating and describing group functions is explored in Chapter 26 by Bales and Strodtbeck. These investigators have recorded in great detail the kinds of interactions that take place among members of problem-solving groups. As a result of this work they are able to show that certain types of groups, at least, go through certain phases in the course of solving group problems. These phases are defined in terms of certain group functions that apparently are required in order for the group to reach a solution to its problem. Further work of this type should greatly increase our understanding of the nature of group functions as they relate to group locomotion.

Finally, in Chapter 27, Schachter, Ellertson, McBride, and Gregory examine the way in which group cohesiveness affects group productivity. They maintain that cohesiveness as such does not necessarily increase or decrease the productivity of a group. Rather, cohesiveness (or attraction to group membership) serves to heighten the susceptibility of group members to influence from other members. Thus if the predominant influences are to restrict production, cohesiveness will tend to heighten these influences and will lower productivity. If, on the other hand, the group influences are in the opposite direction, cohesiveness will tend to heighten productivity.

#### REFERENCES

1. Barnard, C. I. *The functions of the executive*. Cambridge: Harvard Univ. Press, 1938.
2. Benne, K. D., & Sheats, P. Functional roles of group members. *Journal of Social Issues*, 1948, 4, No. 2, 41-49.
3. Bion, W. R. Experiences in groups, I-VI. *Human Relations*, 1948-50, 1, 314-320, 487-496; 2, 13-22, 295-303; 3, 3-14, 395-402.
4. Carter, L. F., & Nixon, M. An investigation of the relationship between four criteria of leadership ability for three different tasks. *Journal of Psychology*, 1949, 27, 245-261.
5. Ezriel, H. A psychoanalytic approach to group treatment. *British Journal of Medical Psychology*, 1950, 23, 59-74.
6. Leavitt, H. J. Some effects of certain communication patterns on group performance. *Journal of Abnormal and Social Psychology*, 1951, 46, 38-50.
7. Lewis, Helen B. An experimental study of the role of the ego in work: I. The role of the ego in cooperative work. *Journal of Experimental Psychology*, 1944, 34, 113-126.
8. Lewis, Helen B., & Franklin, Muriel. An experimental study of the role of the ego in work: II. The significance of task orientation in work. *Journal of Experimental Psychology*, 1944, 34, 195-215.
9. Mintz, A. Nonadaptive group behavior. *Journal of Abnormal and Social Psychology*, 1951, 46, 150-159.
10. Pepitone, Emmy A. *Responsibility to the group and its effects on the performance of members*. Unpublished doctor's dissertation, Univ. of Michigan, 1952.
11. Rosenthal, D., & Cofer, C. N. The effect on group performance of an indifferent and neglectful attitude shown by one group member. *Journal of Experimental Psychology*, 1948, 38, 568-577.
12. Shattle, C. L. Leadership and executive performance. *Personnel*, 1949, 25, 370-380.
13. Shaw, Marjorie F. A comparison of individuals and small groups in the rational solution of complex problems. *American Journal of Psychology*, 1932, 44, 491-504.



## The Effects of Cooperation and Competition upon Group Process

Morton Deutsch

The concept of *cooperation* and the interrelated concept of *competition* are rarely missing in discussions of interpersonal and intergroup relations. Implicitly, they play a key role in the writings of many social theorists. Yet, despite the obvious significance of these concepts for the understanding and control of social process, there has been little in the way of explicit theorizing and virtually no experimental work with respect to the effects of cooperation and competition upon social process. The work in this area has largely been concerned with the effects of the individual's motivation to achieve under the two different conditions. None of the experimental studies has investigated the interactions between individuals, the group process that emerges as a consequence of the cooperative or competitive social situation.

The purpose of this article is to sketch out a theory of the effects of cooperation and competition upon small (face-to-face) group functioning and to present the results of an experimental study of such effects.

### PART I

#### A Conceptualization of the Cooperative and Competitive Situations with a Development of Some of its Logical and Psychological Implications

In a *cooperative social situation* the goals for the individuals or subunits in the situation under consideration have the following characteristics: the goal regions for each of the individuals or subunits in the situation are defined so that a goal region can be entered (to some degree)

This chapter is a condensation of two separate articles. The reader is referred to the original articles for more complete treatment: *Human Relations*, 1949, 2, 129-152 and 199-231. This material is reprinted by permission of the author and of *Human Relations*.

by any given individual or subunit only if all the individuals or subunits under consideration can also enter their respective goal regions (to some degree). For convenience's sake, the phrase *promotively interdependent goals* will be used to identify any situation in which the individuals or subunits composing it have their goals interrelated by the characteristic defined above.)

In a *competitive social situation* the goals for the individuals or subunits in the situation under consideration have the following characteristic: the goal regions for each of the individuals or subunits in the situation are defined so that, if a goal region is entered by any individual or subunit (or by any given portion of the individuals or subunits under consideration), the other individuals or subunits will, to some degree, be unable to reach their respective goals in the social situation under consideration. For convenience's sake, the phrase *contriently interdependent goals* will be used to identify any situation in which the individuals or subunits composing it have their goals interrelated by the characteristic defined immediately above.

It should, perhaps, be noted that there are probably very few, if any, real-life situations which, according to the definitions offered above, are "purely" cooperative or competitive. Most situations of everyday life involve a complex set of goals and subgoals. Consequently, it is possible for individuals to be promotively interdependent with respect to one goal and contriently interdependent with respect to another goal. Thus, for example, the members of a basketball team may be cooperatively interrelated with respect to winning the game, but competitively interrelated with respect to being the "star" of the team.

It is also rather common for people to be promotively interdependent with respect to subgoals and contriently interdependent with respect to goals, or vice versa. For instance, advertising concerns representing different cigarette companies may be cooperatively interrelated with respect to the subgoal of increasing the general consumption of cigarettes but competitively interrelated with respect to the goal of increasing both the relative and absolute sales of a specific brand of cigarette.

No attempt will be made here to describe and analyze further the wide variety of "impure" cooperative and competitive situations which are found in everyday life. The theoretical development to be presented will be primarily concerned with "pure" cooperative and competitive situations. However, it is believed that in many circumstances not much theoretical extrapolation is necessary to handle the more complex situations.

From the definitions of promotively and contriently interdependent goals, it appears to follow that (a) any person, X, who has promotively interdependent goals with persons A, B, C, etc., will come to have pro-

motively interdependent locomotions in the direction of his goal with persons A, B, C, etc.; (b) any person, Y, who has contritly interdependent goals with persons A, B, C, etc., will come to have contritly interdependent locomotions in the direction of his goal with persons A, B, C, etc.

The above statements are based on the following considerations. Locomotion in the direction of the goal, from any point not in the goal region, may be thought of as a condition for entry into the goal region. Entry into the goal region may be thought of as a part of locomotion in the direction of the goal, entry being the final step in locomotion. It follows that a locomotion by X or Y in the direction of his goal can be considered to be promotively or contritly interdependent with the locomotions of A, B, C, etc., in the direction of their goals, the nature of the interdependence with respect to locomotions depending upon the nature of the interdependence with respect to goal regions.

Several major differences reveal themselves as inherent in the distinctions between the cooperative and competitive social situations. The analysis of the cooperative situation reveals that all the individuals in such a setting occupy the same relative positions with respect to their goals. If any one individual locomotes, the others must also locomote in the same direction. In the competitive situations, the various individuals may occupy the same or different positions with respect to their goals. Locomotion by any individual has no necessary effect on the locomotions of others, though it may affect the relative positions of the various individuals.

Up to this point we have stated some of the consequences logically inherent in the conceptualizations of simple cooperative and competitive situations. No statements have been made which have a direct psychological reference, i.e., a reference in terms of individual life spaces. The statements have had reference only to an objectively defined social space.

The next step called for is to derive psychological implications from these statements by introducing additional psychological assumptions which will somehow relate these statements about events in objective social space to events in individual life spaces. It should be apparent that very complex assumptions are required to make any rigorously derived predictions about behavior from an analysis of the characteristics of an objective social situation. However, as this problem relates to the specific conditions of the experiment to be reported here, we shall make the relatively simple assumption that the perceptions and expectations of an individual are likely to be veridical to his environment if he has had enough experience with the situation, if he has intelligence, and if the situation is simple enough.

We may now proceed to state certain specific hypotheses.

### Basic Hypotheses

**Hypothesis 1.** Individuals who are exposed to the cooperative social situation (*Indiv coop*) will perceive themselves to be more promotively interdependent (in relation to the other individuals composing their group) with respect to goal, locomotions, facilitations, and similar matters, than will individuals who are exposed to the competitive social situation (*Indiv comp*).

**Hypothesis 1a.** *Indiv comp* will perceive themselves to be more contritely interdependent (in relation to the other individuals composing their group) with respect to such matters as goal, locomotions, and facilitations than will *Indiv coop*.

For convenience's sake, let us direct our attention to the psychological implications of locomotion in the cooperative and the competitive situations. Let us analyze a hypothetical instance with respect to locomotion in the direction of the goal, in which A locomotes in the direction of his goal and the other individuals in the social situation perceive that A is locomoting.

1. THE COOPERATIVE SITUATION. Under these conditions X would be likely to perceive that he has locomoted toward his goal as a consequence of A's actions. Several implications seem directly to follow, if we accept certain additional psychological assumptions:

**Substitutability.** Since X has locomoted toward his goal as a consequence of A's actions, there is no longer any necessity for X to perform any action which is similar to A's.

**Positive cathexis.** If we make a rather widely accepted assumption that an entity will acquire positive valence or cathexis if that entity is seen to be promotively related to need satisfaction, it is possible to derive that A's action (which results in locomotion in the direction of the goal) will be positively cathected by X. That is, X is likely to accept, like, or reward A's action.

**Positive inducibility.** Let us assume that inducibility derives from the fact that the inducible person perceives the inducing entity to be such that it can cause the intensification, continued persistence, or lowering of need tension within himself. Positive inducibility<sup>1</sup> occurs when the inducing entity is seen to be promotive rather than contrient with respect to tension reduction (or when the inducing entity is seen as capable of producing even more tension than before).

Making the above assumption, one can derive that X will stand in the relationship of positive inducibility to A insofar as A's action contributes towards X's locomotion in the direction of his goal.

<sup>1</sup> Positive inducibility is meant to include two related phenomena: (a) the production of additional *own* forces in the direction induced, and (b) the channeling of existing *own* forces in the direction induced.



*Facilitations and hinderings.* If X facilitates the locomotion of A in the direction of his goal, he also facilitates his own locomotion. Thus, X's facilitations of others are likely to result in his own locomotion and therefore are also likely to result in tension reduction with respect to that locomotion. His own actions of facilitation (helpfulness) will become positively cathected and will be likely to be manifested in appropriate situations. By similar reasoning, we conclude that acts hindering locomotion in the direction of the goal (obstructiveness) will be negatively cathected and will be avoided.

2. THE COMPETITIVE SITUATION. Under conditions of competition essentially opposite conclusions to those above are to be drawn:

*Substitutability.* It is evident that there will be no substitutability.

*Negative cathexis.* The assumption here is parallel to that made in deriving positive cathexis. An entity will acquire negative cathexis if that entity is seen to be contritly related to need satisfaction (and therefore is seen to decrease the probability of need satisfaction). A's locomotions in the direction of his goal will, therefore, be negatively cathected by Y.

*Negative inducibility.* Assuming that negative inducibility<sup>2</sup> occurs when the inducing entity is seen as contrit with respect to tension reduction, one can derive that Y will stand in the relationship of negative inducibility to A insofar as A's actions lead to locomotions by A which decrease Y's probability of reaching his goal. However, another factor, cognitive in nature, may come into play making Y's relation to B one of ambivalence or noninducibility—the cognition that going in a direction opposite to or away from A's would be going in a direction opposite to or away from his own goal.

*Facilitations and hinderings.* When others locomote in the direction of the goal, helpfulness will become negatively cathected, obstructiveness positively cathected. The converse should be true for locomotion in a direction opposite to that of the goal.

We can, with the same kinds of assumptions, analyze a hypothetical instance in which B locomotes in a direction away from his goal. Without detailing the analysis, it is evident that in the cooperative situation, substitutability is not expected, but one would expect negative cathexis and negative inducibility. The competitive situation is not so unequivocal. Here one would expect positive cathexis and ambivalent inducibility or noninducibility.

Our statements about substitutability, cathexis, inducibility, and helpfulness are somewhat different in the two social situations, depending upon whether locomotions are made in the direction of the goal or away

<sup>2</sup> Negative inducibility is meant to include two related phenomena. (a) the production of additional *own* forces and (b) channeling existing *own* forces in the direction opposite to that desired by the inducer.

from it. To test the theory experimentally, it is necessary, therefore, to make some assumption about the incidence of these two directions of locomotion. We assume that, under the experimental conditions set up to test the theory, in both social situations there will be more locomotions in the direction of the goal than in a direction away from the goal. From this assumption and the foregoing analysis it is possible to assert the following hypotheses:

**Hypothesis 2.** There will be greater substitutability for similarly intended actions among *Indiv coop* as contrasted with *Indiv comp*.

**Hypothesis 3.** There will be a larger percentage of actions by fellow members positively cathected by *Indiv coop* than by *Indiv comp*.

**Hypothesis 3a.** There will be a larger percentage of actions by fellow members negatively cathected by *Indiv comp* than by *Indiv coop*.

**Hypothesis 4.** There will be greater positive inducibility with respect to fellow members among *Indiv coop* than among *Indiv comp*.

**Hypothesis 4a.** There will be greater internal (self) conflict among *Indiv comp* than/among *Indiv coop*.

**Hypothesis 5.** There will be more helpfulness towards one another among *Indiv coop* than among *Indiv comp*.

**Hypothesis 5a.** There will be more obstructiveness towards one another among *Indiv comp* than among *Indiv coop*.

### Implications for Group Functioning

Let us turn now to the next step, that of applying some of the psychological implications of the hypotheses derived in the preceding section to the functioning of small face-to-face groups.

#### Organization

From Hypothesis 4 (positive inducibility), it seems evident that one would expect greater coordination of effort, as well as more frequent interrelationship of activity, among *Indiv coop* than among *Indiv comp*.

**Hypothesis 6.** At any given time there will be more coordination of efforts (working together, interrelation of activities) among *Indiv coop* than among *Indiv comp*.

**Hypothesis 6a.** Over a period of time, there will be more frequent coordination of efforts among *Indiv coop* than among *Indiv comp*.

If we assume that the individuals composing the various groups in both the cooperative and competitive situations differ from one another with respect to ability or personal inclinations to contribute, it is possible from the substitutability hypothesis (Hyp. 2) to derive:

**Hypothesis 7.** There will be more homogeneity with respect to amount of contributions or participations among *Indiv comp* than among *Indiv coop*.

The above hypothesis follows from the consideration that the contribution of an *Indiv coop* can substitute for similarly intended contributions by another *Indiv coop*. This does not hold for *Indiv comp*. In the cooperative situation, if any individual has ability and contributes, there is less need for another individual to contribute, producing greater heterogeneity in amount of contributions.

Making the same kinds of assumptions as above, plus the additional ones that the individuals comprising the various groups differ in respect to either ability, interest, or both, in performing the various functions necessary for successful task completion, it is possible from the substitutability hypothesis to derive:

**Hypothesis 8.** There will be greater specialization of function (i.e., different individuals fulfilling different functions) among *Indiv coop* than among *Indiv comp*.

If we assume some time or achievement pressure, from the substitutability hypothesis it is also possible to derive:

**Hypothesis 9.** There will be greater specialization with respect to content or activity (i.e., different individuals taking different aspects of the task and working on them simultaneously) among *Indiv coop* than among *Indiv comp*.

The structure of certain kinds of tasks makes it extremely difficult for this type of specialization to take place. Thus, one would expect fewer differences between *Indiv coop* and *Indiv comp* on some tasks than on others.

If specialization of function occurs, and we assume that expectations are established as a result of this specialization and that these expectations act as a determinant of behavior, we would expect:

**Hypothesis 10.** There will be greater structural stability (from like situation to like situation) with respect to functions assumed among *Indiv coop* than among *Indiv comp*. This difference will increase with time.

From the lack of substitutability among *Indiv comp* one can derive a rigidity, each individual always trying to fulfill all the functions. Stability of structure among *Indiv coop* may result in some perseverance but there does not seem to be any reason to equate rigidity and stability.

**Hypothesis 11.** In the face of changing circumstances, more organizational flexibility (change of roles to adapt to circumstances) will be manifested among *Indiv coop* than among *Indiv comp*.

### Motivation

From the hypothesis about positive inducibility one can expect:

**Hypothesis 12.** The direction of the forces operating on *Indiv coop* will be more similar than the direction of the forces operating on *Indiv comp*.

From this hypothesis one would expect more rapid locomotions, i.e.,

more rapid decisions and reaching of agreements by cooperative groups. Another point to be considered here is that of the frame of reference with respect to locomotion in the cooperative and competitive situations. In the latter situation, the individual is oriented to locomotions relative to those of other individuals with whom he is competing; in the cooperative situation, meaningful locomotion units are defined in relation to task completion. One can therefore expect:

**Hypothesis 13.** The directions of the forces on *Indiv coop* will be more toward task closure than will the forces on *Indiv comp*, i.e., there is more achievement pressure on *Indiv coop*.

From the hypothesis of positive inducibility we can assert that a force on any *Indiv coop* is likely to be paralleled by a force on other *Indiv coop*. Thus, if we define *group motivation* as some complex function of the strength of forces that operate simultaneously on all individuals in the group, there follows:

**Hypothesis 14.** The group force in the direction of the goal in a cooperative group will be stronger than such a group force in a competitive group.

From positive inducibility we would expect more additional own forces to be induced on *Indiv coop* once he is exposed to induction by other members. In the competitive situation, due to combined negative and positive induction, one would also expect the production of additional own forces. If to the concept of the sum of the strength of forces operating on an individual we coordinate interest, or involvement, there does not seem to be any clear-cut rationale for predicting differences between the situations.

**Hypothesis 15.** There will not be a significant difference in the total strength of the forces (interest, involvement) operating on *Indiv coop* and *Indiv comp*.

### Communication

From the substitutability hypothesis and the additional assumptions that (a) it is perceived that locomotion takes place either through the utterance of many good ideas, i.e., the production of many signs that will be evaluated highly, or through the frequent persuasion or informing of others via communication; (b) quantitative efforts do not seriously interfere with quality or that, if they do, quantity is seen to be as important as or more important than quality, and (c) the time available allows for more production of signs than are necessary for optimal solution of any problem, it is possible to derive:

**Hypothesis 16.** When the task structure is such that production in quantity of observable signs is perceived to be a means for locomotion, there



will be a greater total of signs produced per unit of time by *Indiv comp* than by *Indiv coop*.

From the hypothesis about the coordination of effort in tasks (Hyps. 6 and 6a), one would expect:

**Hypothesis 17.** When the task structure is such that locomotion is possible without the production of observable signs, there will be a greater total production of such signs per unit time by *Indiv coop* than by *Indiv comp*.

If from the communicator's point of view communication can be considered a locomotion or a means of locomotion, the state of receptivity, i.e., the readiness to be aroused, in the communicatee can potentially facilitate or hinder the locomotions of the communicator. From the hypotheses concerning helpfulness and obstructiveness (Hyps. 5 and 5a) one can derive:

**Hypothesis 18.** There will be less attentiveness to one another's productions of signs among *Indiv comp* than among *Indiv coop*.

If attentiveness is a condition for the arousing of common significata, there follows:

**Hypothesis 19.** The production of signs will less frequently result in common significata among *Indiv comp* than among *Indiv coop*.

Even when attentiveness is present, there probably will be a greater likelihood of distortion by communicatees in the competitive situation, since in this situation locomotion is likely to be perceived in terms of its effect on relative position, while in the cooperative situation the locomotion of any individual is likely to be perceived as resulting in the locomotion of the others. The consequence of this difference is that the expressive characteristics of the production of signs are likely to be more significant to *Indiv comp*. A sign is expressive if the fact of its production is itself a sign to its interpreter of something about the producer of the sign.

**Hypothesis 20.** Common signification, even when attentiveness is optimal, will be less prevalent among *Indiv comp* than *Indiv coop*.

From the hypothesis of positive inducibility, there follows directly:

**Hypothesis 21.** There will be more common appraisals (mutual agreements and acceptances) of communications by communicators and communicatees among *Indiv coop* than among *Indiv comp*.

### Orientation

From the hypothesis about communication, one can assert:

**Hypothesis 22.** *Indiv coop* will have more knowledge about other active members than will *Indiv comp*.

Group orientation, as we define it, exists to the extent that there is

commonality of perception among the members. It can be assessed in relation to goals, position at a given time, direction to the goal, or steps in the path to the goal. From the hypotheses concerning communication and positive inducibility, one can derive:

Hypothesis 23. There will be more group orientation among *Indiv coop* than among *Indiv comp*.

### Group Productivity

From the hypothesis with respect to strength of group motivation (Hyp. 14), assuming that locomotion will proceed more rapidly the stronger the motivation, one can derive:

Hypothesis 24. *Indiv coop* as a group will produce more per unit of time than will *Indiv comp* as a group.

Hypothesis 24a. It will take less time for *Indiv coop* as a group to produce what *Indiv comp* as a group produce.

Let us assume that any or all of the following are negatively related to group productivity in respect to quality of product: lack of coordination, communication difficulties, persisting internal conflict, and lack of group orientation. We can then derive:

Hypothesis 25. The qualitative productivity of *Indiv coop* as a group will be higher than that of *Indiv comp* as a group.

From the hypotheses about communication and about positive inducibility, with the additional assumption that the individuals in the various groups have information and experience that can benefit the others, it is possible to derive:

Hypothesis 26. *Indiv coop* will learn more from one another than will *Indiv comp*. (The more knowledgeable and experienced of *Indiv coop* will, of course, learn less than the not so well-informed *Indiv coop*.)

### Interpersonal Relations

From the hypotheses about cathexis (Hyps. 3 and 3a), we expect the actions of fellow members to be more positively cathected among *Indiv coop* than among *Indiv comp*. We also expect the perceived source of these actions to acquire, to some extent, a cathexis similar to that held with respect to the actions. Thus, there follows:

Hypothesis 27. There will be more friendliness among *Indiv coop* than among *Indiv comp*.

By similar reasoning, it follows that the cathexis will be generalized to the products of the joint actions of fellow members and oneself, i.e., the group products. Thus, we propose:

**Hypothesis 28.** The group products will be evaluated more highly by *Indiv coop* than by *Indiv comp*.

If we define *group functions* as any actions which are intended to increase the solidarity of the group, or to maintain and regulate the group so that it functions smoothly, and assert that group functions are seen to be helpful, from the hypothesis about helpfulness (Hyp. 5a) there follows:

**Hypothesis 29.** There will be a greater percentage of group functions among *Indiv coop* than among *Indiv comp*.

If we define *individual functions* as any actions of the individual which are not immediately directed toward task solution and which are not group functions (actions which are obstructive, blocking, aggressive, or self defensive are individual functions), from the hypothesis about obstructiveness (Hyp. 5a) there follows:

**Hypothesis 30.** There will be a greater percentage of individual functions among *Indiv comp* than among *Indiv coop*.

From the hypothesis concerning communication, it was developed (Hyp. 22) that over a period of time *Indiv coop* should know more than *Indiv comp* about the attitudes of (active) fellow members. Using the same reasoning, and making the assumption that the communication difficulty with respect to this content is also greater for *Indiv comp*, there follows:

**Hypothesis 31.** The perception of the attitudes of the others towards aspects of one's own functioning in the group by *Indiv coop* should be more realistic than such perceptions by *Indiv comp*.

From the hypothesis about inducibility, there also follows:

**Hypothesis 32.** The attitudes of any individual with respect to his own functioning should be more similar to the attitudes of the others with respect to his functioning among *Indiv coop* than among *Indiv comp*.

From Hypothesis 31 and the hypothesis about cathexis, we can derive with respect to *Indiv coop* that he has a favorable effect on the others in the group. If we make the assumption of *autistic hostility*, that is, that hostile impulses under conditions of reduced communication tend to create the expectation of counter-hostility, we can demonstrate:

**Hypothesis 33.** *Indiv coop* will perceive himself as having more favorable effects on fellow members than will *Indiv comp*.

The term *attitude of the generalized other* refers to an internalized structure which is developed as a result of introjecting the mutually interacting attitudes of those with whom one is commonly engaged in a social process. From our preceding discussion, it is clear that the development of the attitude of the generalized other requires communication and positive inducibility. There follows, then:

**Hypothesis 34.** Incorporation of the attitude of the generalized other will occur to a greater extent in *Indiv coop* than in *Indiv comp*.

For present purposes, the *feeling of obligation* to other members will be taken as an operational definition of the degree of internalized attitude of the generalized other.

### ***The Concept of Group***

In concluding this theoretical analysis, let us suggest a linkage between the conceptualization of the cooperative situation and the concept of *group*. We propose a linkage similar to certain proposals of Koffka (3) and Barnard (1).

We present the following definitions:

1. A sociological group exists (has unity) to the extent that the individuals composing it are pursuing promotively interdependent goals.
2. A psychological group exists (has unity) to the extent that the individuals composing it perceive themselves as pursuing promotively interdependent goals.
3. A psychological group has cohesiveness as a direct function of the strength of goals perceived to be promotively interdependent and of the degree of perceived interdependence.

The following definitions are reformulations of the above definitions from the point of view of membership:

- 1a. Individuals or subunits belong in a sociological group to the extent that they are pursuing promotively interdependent goals.
- 2a. Individuals or subunits possess membership in a psychological group to the extent that they perceive themselves as pursuing promotively interdependent goals.
- 3a. Individuals or subunits possess membership motive in a psychological group as a direct function of the strength of goals perceived to be promotively interdependent and of the degree of perceived interdependence.

The conceptualization of the cooperative situation is, of course, identical with the definition of social group. It follows that if *Indiv coop* and *Indiv comp* are equated in other respects, *Indiv coop* will possess more unity as a sociological group than will *Indiv comp*. From the logical and psychological considerations advanced above it also follows that *Indiv coop* will possess more unity as a psychological group than will *Indiv comp*. Since all our hypotheses are relative statements based on the assumption that *Indiv coop* and *Indiv comp* are equated in other respects, it is possible to substitute for *Indiv coop* the phrase *a psychological group with greater unity* and to substitute for *Indiv comp* the phrase *a psychological group with lesser unity*.



## PART II

## An Experimental Study of the Effects of Cooperation and Competition upon Group Process

## The Experimental Design

In setting up the experiment to test the hypotheses it was necessary to have the following: (a) intelligent and reasonably well-adjusted subjects who would regularly attend experimental sessions over a period of time; (b) some degree of control over the goals the subjects strove for (to be able, through manipulations of these goals, to place the subjects in cooperative or competitive situations); and (c) a readily observable situation.

The somewhat unorthodox Introductory Psychology course offered by the Industrial Relations Section at the Massachusetts Institute of Technology appeared to provide the needed conditions. Through the excellent cooperation of the Industrial Relations Section, it became possible to make the experimental sessions an integral part of the course. Regular attendance was thus assured. The experimenter-instructor's control over grades and assignments also provided the needed degree of control over the goals of the subjects.

At the first meeting of the various sections, it was announced that the department was interested in doing research on the course and wanted to form some small sections to be composed of five students and one instructor. These sections would meet once weekly as a substitute for the regularly scheduled three one-hour meetings. Nothing was stated about the research except that it had the purpose of improving the course. Volunteers were requested and over 50 were obtained, which was more than enough. The volunteers were then formed into 10 tentative groups on the basis of their available meeting times. Though this very much limited the possibility of matching personalities as well as groups, some flexibility still remained because of the large overlappings of time schedules.

All the volunteers were administered the following tests: The A-S Reaction Study, Wide Range Vocabulary Test, and the University of California ideology questionnaires. On the basis of these tests and other face-sheet data about the individuals, the most deviant students were eliminated as subjects. The time schedules of the remaining subjects did not allow for further shifting of subjects from group to group.

The next step was to match pairs of groups. Each group, at its first meeting together, was told, "You are to be constituted as a board of human relations experts. As experts, each week you will be presented a hu-

man relations problem. Your job is to analyze and discuss the problem and to formulate, in letter form, some written recommendations." They were then given a human relations problem having to do with a question of discipline in a children's camp. A total of 50 minutes for the discussion and writing of recommendations was allowed. Each of the groups was rated by the experimenter on a nine-point scale in terms of the productivity of their discussion of the problem. Groups were then paired off in terms of these ratings, and by a random procedure one of each pair was assigned to the cooperative treatment and the other to the competitive treatment.

### Experimental Procedures

Instructions designed to produce the cooperative or the competitive situation were given at the beginning of the second meeting to the appropriate groups. The two sets of instructions are presented below.<sup>3</sup>

#### *Instructions to Cooperative Groups*

*Puzzle problems.* Every week you will be given a puzzle to solve as a group. These puzzles are, in effect, tests of your ability to do clear, logical thinking as a group. Your effectiveness in handling the problem will be evaluated by ranking you as a group in comparison with four other groups who will also tackle the same problems. Each of the five groups will be ranked. The group that works together most effectively will receive a rank of 1, the next most effective group will receive a rank of 2, the least effective group will receive a rank of 5. The ranks that each group receives on the weekly problems will be averaged. At the end of it all, we should be able to have a pretty good picture of each group's ability to do clear, logical thinking.

To motivate you to contribute your best efforts, we will have a reward. The group that comes out with the best average will be excused from one term paper and will receive an automatic *H* for that paper. That is, if your group receives the highest rank, all of you will receive an automatic *H*.<sup>4</sup>

You are to come out with one solution as a group. When you have decided as a group that you have reached a solution, let me know by handing me your answer written on this answer sheet.

*Human relations problems.* There are two principal factors determining your grade for this course: (a) the discussions in class of the human relations problems, and (b) the papers you hand in periodically.

Your grade for the discussions in class will be determined in the following manner:

Each week the plans or recommendations that the group comes out with as a result of discussion will be judged and evaluated by ranking them in comparison

<sup>3</sup> "Pure" cooperative and competitive situations were not created by the instructions. Other goals, related to such needs as recognition and affiliation, made it possible for these instructions to produce only relative differences of cooperation and competition.

<sup>4</sup> An *H* at M.I.T. is the highest grade obtainable.

with the efforts of four other similar groups. The group whose discussions and recommendations are judged to be best (in terms of both quality and quantity of ideas) will receive a rank of 1, the next best group a rank of 2, and so on: the worst group will receive a rank of 5.

Every member of the group will be given the rank that his group receives. That is, all members of a group will receive the same rank, the rank being determined by how good their group discussions and recommendations are.

The ranks that are received weekly will be averaged and used in making up that part of the grade which is based on class discussion.

Thus, in effect, you are to consider the discussions of these human relations problems presented to you weekly as a test in which your group rank or grade is determined by your ability to effectively apply insight to these problems. Remember, the group whose discussions and recommendations are best in quality and quantity will get the highest grade; the group whose discussions and recommendations are worst will get the lowest grade.

In this meeting, as in all the other meetings, you will consider yourself to be a board of human relations experts. As such, you have been presented with the following problem which I will read to you. You may glance at your copies of the problem as I read, if you wish to do so. (*The problem was then read by the experimenter.*)

You will be allowed a total of 50 minutes for both the discussion and the writing of recommendations. You are to write your recommendations in letter style, on this form which I have provided.

You will be notified when you have only 20 minutes, 10 minutes and 5 minutes left.

### ***Instructions to Competitive Groups***

*Puzzle problems.* Every week you will be given a puzzle to solve as a group. These puzzles are, in effect, tests of your individual abilities to do clear, logical thinking. The contributions that each of you make to solving the weekly puzzle will be ranked, so that the person who contributes most to the solution will receive a rank of 1, the one who contributes next most will receive a rank of 2, etc. The one who contributes least will receive a rank of 5. The ranks that each of you receive on the weekly problems will be averaged. At the end of it all, we should have a pretty good picture of each individual's ability to do clear, logical thinking.

To motivate you to contribute your best individual efforts, we will have a reward for the individual who comes out with the best average. He will be excused from one term paper and will receive an automatic *H* for that paper.

You are to come out with one solution as a group. When you have decided as a group that you have reached a solution, let me know by handing me your answer written on this answer sheet.

*Human relations problem.* There are two principal factors determining your grade for this course: (a) the discussions in class of the human relations problems, and (b) the papers you hand in periodically.

Your grades for the discussion in class will be determined in the following manner:

Each week the contributions that each of you makes to the plan of recommendations that the group comes out with as a result of discussion will be ranked so that the individual contributing the most (in terms of both quality and

quantity of ideas) to the group plan will receive a rank of 1, the individual contributing next most will get a 2, and so on; the individual who contributes least will get a 5.

The ranks that each individual receives from week to week will be averaged and will be used in making up that part of his grade which is based on class discussion.

Thus, in effect, you are to consider the discussions of these human relations problems presented to you weekly as a test, in which each of you is being ranked and graded on your individual ability to effectively apply insight to these problems. Remember, the individual who contributes most in quality and quantity to the discussions and recommendations will get the highest grades; the individual who contributes least will get the lowest grades.

In this meeting, as in all the other meetings, you will consider yourself to be a board of human relations experts. As such, you have been presented with the following problem which I will read to you. You may glance at your copies of the problem as I read, if you wish to do so. (*The problem was then read by the experimenter.*)

You will be allowed a total of 50 minutes for both the discussion and the writing of recommendations. You are to write your recommendations in letter style, on this form which I have provided.

You will be notified when you have only 20 minutes, 10 minutes, and 5 minutes left.

The cooperation of the subjects in not discussing problems and procedures outside of the group meetings was solicited. The same instructions were repeated at each group meeting. Subjects in both the cooperative and competitive groups were not informed about their weekly grades until the end of the experiment.

During the five weeks of experimentation, each of the groups met once weekly for a period of approximately three hours. The schedule of a meeting was as follows: (a) The experimenter read the appropriate instructions for the puzzles. (b) The group undertook the solution of the puzzle. (c) The students filled out a brief questionnaire while the observers made various ratings. (d) The experimenter read the appropriate instructions for the human relations problem. (e) The group was allowed a total of 50 minutes for the discussion and writing of recommendations. (f) The students then filled out a lengthy questionnaire. (g) There was a 10-15 minute break. (h) The rest of the three hours the experimenter lectured, encouraging active discussion, on psychological principles such as are involved in "need theory," "level of aspiration," and "conflict." Each of the 10 groups received the same informal lectures in any given week.

It should be clear that the discussion and solution of both the puzzles and the human relations problems were undertaken by the various groups without the participation of the experimenter-instructor. During these discussions he sat at a table with the other observers and functioned as an observer.



It should be emphasized that the only differences introduced into the three-hour meetings by the experimenter-instructor were the differences in instructions read to the cooperative and competitive groups. The experimenter-instructor tried to create a friendly, informal, but impersonal relationship with all groups.

### *The Problems*

The background considerations previously outlined dictated that human relations problems be used as group tasks. In addition, for comparative purposes, it was thought that it would be interesting to have the groups confronted with problems of a rather different type. The human relations problems are tasks in which there are no clearly discernible objective criteria of locomotion; they are tasks in which the group itself, through consensus, provides the criteria for judging locomotion. In addition, the content of these problems is likely to evoke strongly-held personal value systems. The puzzle problems were, for convenience, chosen for contrast. Due to their objective (i.e., logically demonstrable) solutions, locomotion could take place without group consensus. This, of course, provided the possibility for relatively more individual work in the puzzles than in the human relations problems. The relative lack of ideological relevance of the content of the puzzle problems also made conflict more likely in the human relations problems.

It is possible that the sequence in which the problems were presented might influence the results obtained. Care was taken, therefore, to control this influence. With the limited number of subjects and groups available it was decided that a latin-square design would be most appropriate. This design makes it possible to vary systematically from group to group the sequence in which the different problems were presented. It permits the effective elimination and estimation (by statistical methods) of the effect of differences among groups, due to the effect of sequence in which the problems are presented, and the effect of different kinds of problems.

## **Measuring Instruments**

### *Instruments Used by the Observers*

For most of the experiment there were four observers. Two major tasks, among others, were assigned to the different observers.

1. THE FUNCTIONS OBSERVATIONS SHEET. The job of the observer was to categorize each participation of the members in terms of the following: (a) who spoke (or gestured), (b) to whom the remark was addressed, (c) the intent of the participant, and (d) the length of the participation. Arbitrarily it was decided to use the *utterance* to define a unit of par-

icipation, with the exception that if more than one function distinctly occurred in any utterance two or more categorizations would be made. To provide the possibility of cross-analysis with other instruments, a new *functions sheet* was used for each five-minute period. To facilitate tabulation no attempt was made to retain sequence of utterances or the linkage "who-to-whom."

The categories used in the Functions Observation Sheet were divided into **three broad groupings:**<sup>5</sup>

*Task functions* include participations which are directed toward the task with which the group is confronted. These functions have as their immediate purpose the facilitation of problem solution. Included in this grouping are such functions as "initiator-contributor," "information-giver," "position-stater," "elaborator," "coordinator," "orientor," "evaluator-critic," "energizer," and "information-seeker."

*Group functions* include participations which are directed toward the functioning of the group. They have for their immediate purpose the maintenance, strengthening, regulation, or perpetuation of the group. Included here are such functions as "encourager-rewarder," "harmonizer-mediator," "good group member," "gate-keeper," "standard-setter," "follower," and "group observer."

*Individual functions* include participations which are directed toward the satisfaction of the participant's individual needs. They have for their immediate purpose the reaching of an individual goal which is neither task nor group relevant. The goal is individual in the sense that the satisfaction aimed at by the participant cannot be participated in by the others, either at all or in the same way. Such functions are grouped here as "play-boy," "sympathy-seeker," "aggressor," "dominator," "blocker," "recognition-seeker," "self-defender," and "self-observer."

The observer, using this instrument, was trained for approximately 30 hours before observing the experimental group meetings.

2. **THE OVER-ALL RATING SCALES.** These are a series of nine-point rating scales which were rated by each observer at the end of each problem. They covered such things as group-discussion productivity, group orientation, self-centeredness, involvement, communication difficulties, attentiveness, and acceptance-rejection. All the rating scales apply to the entire discussion of any given problem.

In considering the various ratings, we should keep in mind that it was impossible to maintain any absolute standards. The ratings more or less

<sup>5</sup> This classification was developed by the present author in conjunction with this research project. It was also used by the National Training Laboratory in Group Development and was the basis for an article appearing under the authorship of Benne and Sheats (2). For fuller description of this system of classification, see the article by Benne and Sheats.

presumed a standard of judgment based on experience with groups of introductory psychology students. Thus, the emphasis throughout will be primarily on the direction of the obtained differences rather than on size of differences between the two types of groups.

The results themselves give *prima-facie* evidence that the observing instruments have sufficient reliability for many of the present purposes. The validity of the observations and ratings, however, cannot be directly determined from the results. One of the primary questions that may arise with respect to the validity of the observations may be concerned with a possible bias among the observers. Thus, if the observers were disposed to see the cooperative groups as being better than the competitive groups, any significant results might be a reflection of this predisposition rather than of real differences.

There is no simple way to insure that the observers had no such predispositions. However, two kinds of evidence support the belief that the observers did not bias their observations in terms of any preconceptions about cooperation and competition: <sup>6</sup> (a) The observers made impromptu statements to the effect that, if they were allowed to keep the instructions in mind, they would have a better interpretive frame of reference for their observations. (b) The second kind of evidence is indirect but, nevertheless, quite convincing. Data collected from the subjects strongly agree with the results from data collected by observers. Since there is no reason to suspect the subjects of bias (they did not know what the experiment was about), this is good indication of lack of bias in the observers.

### *Instruments Used by the Subjects*

1. *The Weekly Questionnaire.* At each meeting after the discussion of the human relations problems, the subjects filled out a questionnaire. The items on the questionnaire consisted for the most part of rating scales which roughly paralleled those in the observers' Over-all Rating Scales. In addition to such scales as attentiveness, communication difficulties, and acceptance-rejection, the subjects rated interest, group-feeling, amount of group cooperation, group productivity, individual productivity, and anticipated reactions of the others to their own contributions.

2. *The Postexperimental Questionnaire.*<sup>7</sup> One week after the last experimental group meeting, the subjects filled out a lengthy questionnaire covering a range of topics. The questionnaire attempted to get at such things as (a) when first and last names were learned; (b) amount and kinds

<sup>6</sup> The observers were never informed by the experimenter of the hypotheses being investigated. .

<sup>7</sup> Due to unavoidable circumstances, this questionnaire was given to only four cooperative groups, totaling 19 subjects, and four competitive groups, totaling 20 subjects.

of social activities mutually engaged in by group members outside of class hours; (c) reactions to the small group meetings, the instructor, and the course; (d) the importance of different factors in motivating the subjects to achieve during the solution of the problems; (e) reaction to the grading system; and (f) reaction to being observed.

## Experimental Results

### *Effectiveness of Instructions*

It is perhaps important to start out by inquiring about the reactions of the subjects to the two different sets of instructions. Clearly, if the instructions never "got over," one could reasonably question their efficacy in producing differences.

All subjects, when requested (D) \* to "describe the method by which you were being graded on the human relations problems," responded with an appropriate description. That is, each subject understood and could recall the essentials of the instructions.

In answer to the question (D), "If you had had completely free choice as to the method of grading discussion in class, which would you have preferred?" the following results were obtained:

Grading Method Preferred	Cooperative	Competitive	No Preference
By <i>Indiv coop</i>	11	6	2
By <i>Indiv comp</i>	6	11	3

Assuming these differences did not exist at the beginning of the experiment, one can conclude that roughly the same percentage of individuals were satisfied with the method of grading to which they were exposed.

Clearly, then, the instructions "got over" to the subjects in both kinds of groups and in such a way as to seem satisfactory to approximately the same percentage in both groups.

### *Perceived Interdependence*

Hypothesis 1 asserts that *Indiv coop* will perceive themselves to be more promotively interdependent than will *Indiv comp*. Table 23.1 presents some relevant data.

Group-centeredness (we-feeling) was rated by the observers to be considerably higher in the cooperative groups for both the puzzles and the human relations problems. The ratings of the subjects, in the questionnaire pertaining to the human relations problems, give the same results.

\* From this point on, A will refer to the *Overall Rating Scales*, B to the *Functions Observation Sheet*, C to the *Weekly Questionnaire* filled out by subjects, and (D) to the *Postexperimental Questionnaire*.



*Indiv coop* give themselves credit for more "group feeling" than do *Indiv comp*. These differences with respect to group-centeredness and group-feeling are significant at the 1% level for both the puzzles and human relations problems. Thus, the evidence gives support to the first part of the hypothesis (perceived promotive interdependence).

TABLE 23.1

DIFFERENCES BETWEEN COOPERATIVE AND COMPETITIVE GROUPS ON DATA RELEVANT TO HYPOTHESES OF PERCEIVED PROMOTIVE AND CONTRIENT INTERDEPENDENCE<sup>a</sup>

VARIABLE	PROBLEM TYPE	TOTAL	
		<i>M dif</i>	<i>p</i>
Group-centeredness (A)	H. R.	+2.98	.001
Group-centeredness (A)	P	+2.54	.001
Group-feeling (C)	H. R.	+1.20	.01
Competitiveness (C)	H. R.	— .37	*
Desire to excel others (D)	H. R.	—2.30	.03
Desire to excel others (D)	P	—2.20	.01

\* The differences for three of the pairs are in the same direction as the total mean difference; these differences have *p*-values of .01, .01, and .13 respectively. The differences for the other two pairs are in an opposite direction; these differences have *p* values of .14 and .23.

The second part of the hypothesis (*Indiv comp* will perceive themselves to be more contriently interdependent than will *Indiv coop*) is partly supported by the same evidence. Thus, the competitive group members were rated to be more self-centered by the observers. Likewise, *Indiv comp* rated themselves as being more self-oriented than did *Indiv coop*. "Perceived contrient interdependence," however, seems to include, in addition to "self-centeredness," the notion of "I" versus "the others." To measure this component, the subjects were asked (C), in reference to the human relations problem, "How competitive with the other members in your group did you feel you were, during the discussion?"

The results obtained here are not so conclusive, though they tend to support the hypothesis (see Table 23.1, competitiveness). It seems probable that the lack of clean-cut results is a reflection of the differing interpretations placed on the word *competitiveness* by *Indiv coop*. This interpretation is supported by the fact that when the question was phrased, "How much did you desire to excel others?" on the Postexperimental Questionnaire, significant differences were obtained in the predicted direction.

<sup>a</sup> The following symbols are being used in the various tables: P = Puzzles, H. R. = Human Relations problems, (A), (B), (C), or (D) = the measuring instrument (see footnote 8). Total *M dif* = average of the differences (cooperative minus competitive) between each of the five paired groups for each of the five experimental weeks. A plus sign indicates that the cooperative groups had more of the variable than did the competitive groups. Total *p* = the *p* value obtained by combining the *p* values for each of the five pairs. A combined value is given only when the direction of the differences for all five pairs is the same as that of the total mean difference.

To sum up, the data support the predictions that perceived promotive interdependence would be greater among *Indiv coop* and that perceived contrient interdependence would be greater among *Indiv comp*.<sup>10</sup>

### Organization

*Coordination of efforts.* Hypothesis 6 asserted that there would be greater degree of coordination of efforts and that coordination would occur more frequently among *Indiv coop* than among *Indiv comp*. Table 23.2 presents the relevant evidence.

TABLE 23.2

DIFFERENCES BETWEEN COOPERATIVE AND COMPETITIVE GROUPS ON DATA RELEVANT TO THE HYPOTHESIS CONCERNING COORDINATION OF EFFORT

VARIABLE	PROBLEM TYPE	TOTAL	
		<i>M diff</i>	<i>p</i>
Working-together (A)	H. R.	+2.42	.001
Working-together (A)	P	+2.68	.001
Degree of coordination (A)	H. R.	+2.62	.001
Degree of coordination (A)	P	+2.57	.001
Group cooperation (C)	H. R.	+1.18	.001

The observers rated that the cooperative groups worked together more frequently (A) and were more highly coordinated (A) than were the competitive groups. In answer to the question (C), "How cooperatively did the group work together on this problem?" the ratings of *Indiv coop* indicated more working together than did the ratings of *Indiv comp*.

Thus the data give rather definite support to the coordination hypothesis.

*Homogeneity of participation.* Hypothesis 7 states that there will be less homogeneity with respect to amount of contribution among *Indiv coop* than among *Indiv comp*. The data presented in Table 23.3 provide the evidence relevant to this hypothesis. The variance in amount of contributions among members has been used as the measure of homogeneity. The differences between variances of paired groups were then entered as scores in the latin square and the customary statistical treatment was made.

<sup>10</sup> We proposed in our theoretical discussion that *Indiv coop* has greater unity as a sociological group than does *Indiv comp*. Also, *psychological unity as a group*, *cohesiveness of a group*, and *strength of membership motives* were defined to be direct functions of the degree of perceived promotive interdependence. Thus, it is possible to state the results here more generally. The data support the hypothesis that a sociological group with greater unity will possess more psychological unity than a sociological group with lesser unity. In further comparisons of *Indiv coop* and *Indiv comp*, one should keep in mind the possibility of making similar more general statements.

TABLE 23.3

DIFFERENCES IN HOMOGENEITY OF AMOUNT OF PARTICIPATION BETWEEN COOPERATIVE AND COMPETITIVE GROUPS

VARIABLE	PROBLEM TYPE	TOTAL	
		<i>M diff</i>	<i>p</i>
Homogeneity of participation (B)	H. R.	-2593	*
Homogeneity of participation (B)	P	-518	.16

\* The differences for four of the pairs are in the same direction as the total mean difference, these differences have *p* values of .005, .07, .13, and .67 respectively. The pair going in the opposite direction has a *p* value of .16.

The data give support for the hypothesis, although the results are not conclusive. In both the puzzles and human relations problems, there is greater homogeneity of participation within competitive groups. Four out of the five pairs in the human relations problem and all of the five pairs in the puzzles go in the direction predicted by the hypothesis.

Further support is given the hypothesis by some additional data which are directly relevant to the basic substitutability hypothesis. On the Weekly Questionnaire the subjects were asked to indicate the reasons they had for not offering suggestions or thoughts to the group discussion. Of the reasons checked by *Indiv coop*, 47% were in the category "Somebody else said pretty much the same thing," compared to 33% for *Indiv comp*.

Thus, though the results are not conclusive, support is given to the hypothesis that there will be more homogeneity in amount of participation among *Indiv comp* than among *Indiv coop*.

*Specialization.* A cursory inspection of the data collected on the Functions Observations Sheets revealed a low reliability of the data needed to test Hypothesis 8 (specialization with respect to function). In the statistical tests that were made the data revealed no clear-cut significance (though with respect to all functions there is, on the average, greater specialization of functioning within cooperative groups than within competitive groups).

The evidence relevant to specialization with respect to content or activity (Hyp. 9) is much more clear-cut. Table 23.4 presents the data. The results definitely indicate that with respect to the job of writing the letter of recommendations, asked for in the human relations problems, there were significantly more instances of division of labor in the cooperative groups. Faced with the problem of achievement in a limited amount of time, cooperative members were able to organize themselves so as not to duplicate one another's efforts. Substitutability of one for the other permitted the members to divide up the job into its different aspects and allowed the various members to work on these components simultaneously. In the competitive situation, writing procedure generally followed

TABLE 23.4

AVERAGE NUMBER OF PERSONS SIMULTANEOUSLY ENGAGED IN WRITING RECOMMENDATIONS FOR THE DIFFERENT HUMAN RELATIONS PROBLEMS IN COOPERATIVE AND COMPETITIVE GROUPS

	BARBER SHOP	CHEATING	WW II VET	NEGRO WORKERS	SUPERVISORS †
Coop *	1.8	2.4	2.0	2.8	2.8
Comp	1.2	1.0	1.2	1.8	1.2

\* In none of the 25 paired experimental sessions were there more members simultaneously engaged in writing in a competitive group than in its paired cooperative group. In sixteen of the sessions there were more members in cooperative groups engaged in simultaneous writing, in the remaining nine sessions there were no differences between the paired groups.

† For all problems, but the Supervisors, only three persons could write simultaneously; it was possible for four persons to write simultaneously on this one.

either of two extremes: (a) One man was assigned the job, usually on the basis of a rotation scheme, and the other members took an active part in supervising the writing. The getting of ideas into written form was seen as a path, thus everyone was actively concerned with what was being written. Since the number of pages, always less than five, prevented the possibility of any compromise—"we each do one"—it was necessary for all to focus on the same activity. As a consequence, it was rare that two members were writing simultaneously. When two or more recorders are shown in the competitive groups, their time of writing did not overlap much. (b) A conscientious member took the form and wrote up recommendations while the others discussed. The discussants showed no interest in the write-up, never examining it, their whole attention being directed to the discussion. The written product was, more or less, considered to be an irrelevant side issue for some conscientious soul to handle. It was not seen as a necessary path, thus it was perfectly permissible for anyone who wished to do so to take over the function of writing.

### Motivation

Hypothesis 12 asserts that the directions of the forces operating on *Indiv coop* should be more similar than the directions of the forces on *Indiv comp*. If this hypothesis is correct, one should expect greater speed in group locomotion for the cooperative groups. The data with respect to locomotion are presented under the heading of *Productivity* below. The data give strong support to the hypothesis.

The validity of the hypothesis presupposes the validity of the basic hypothesis with respect to positive inducibility. The following questions (C), "How did you react to the ideas or suggestions of others?" and "How frequently was your own thinking or reaction affected by what the others were saying?" are relevant. Table 23.5 indicates that *Indiv coop* were



affected by the ideas of others significantly more often than were *Indiv comp*. Table 23.7 indicates, further, that *Indiv coop* were markedly more agreeable and acceptant towards the ideas initiated by others. These two sets of facts provide direct support for the basic hypothesis with respect to positive inducibility and indirect evidence for Hypothesis 12.

TABLE 23.5

DIFFERENCES BETWEEN COOPERATIVE AND COMPETITIVE GROUPS ON DATA RELEVANT TO THE MOTIVATION HYPOTHESES

VARIABLE	PROBLEM TYPE	TOTAL	
		<i>M diff</i>	<i>p</i>
Effect of other's ideas (C)	H. R.	+ .78	.001
Achievement pressure (A)	H. R.	+ 1.00	.01
Achievement pressure (A)	P	+ .49	*
Strength of motivation to achieve (D)	H. R.	+ .83	.01
Strength of motivation to achieve (D)	P	+ .20	not sig.
Involvement (A)	H. R.	+ .15	not sig.
Involvement (A)	P	+ .23	not sig.
Interest (C)	H. R.	- .10	not sig.

\* The differences for four of the five pairs are in the same direction as the mean differences, these differences have *p* values of .04, .13, .24, and .68. The *p* value for the pair going in the opposite direction is .66.

From Hypothesis 13 one would predict that there would be more pressure for achievement in the cooperative groups than in the competitive ones. The ratings of the observers and of the subjects both produce significant differences in the predicted direction for the human relations problem. The direction of the differences obtained for the puzzles is in line with the hypothesis, but the size of the differences is not significant.

Hypothesis 15 states that there is nothing inherent in the cooperative or competitive situations which should produce differences in the strength of force operating on individuals in the two situations. *Interest* or *involvement* is considered to be an operational measure of total situationally relevant forces. The data of Table 23.5 clearly provide no basis for rejecting the hypothesis. The differences between cooperative and competitive groups with respect to involvement or interest in the problems at hand were negligible.

### Communication

Hypotheses 16 and 17 assert that the volume of participation of the cooperative as contrasted with the competitive groups will be (Hyp. 16) smaller for the human relations problems, and (Hyp. 17) greater for the puzzles. The relevant data are presented in Table 23.6.

TABLE 23.6

DIFFERENCES IN PARTICIPATION VOLUME, ATTENTIVENESS, AND COMMUNICATION DIFFICULTIES BETWEEN COOPERATIVE AND COMPETITIVE GROUPS

VARIABLE	PROBLEM TYPE	TOTAL	
		<i>M diff</i>	<i>p</i>
Participation volume * (B)	H. R.	-22.8	†
Participation volume (B)	P	+118	.001
Attentiveness (A)	H. R.	+1.04	.01
Attentiveness (A)	P	+1.50	.001
Attentiveness (C)	H. R.	+ .42	‡
Communication difficulties (A)	H. R.	-1.94	.001
Communication difficulties (A)	P	-1.39	.01
Difficulty in communicating to others (C)	H. R.	- .81	.001
Difficulty in understanding others (C)	H. R.	- .67	.001

\* *Participation Volume* has the meaning of Total Number of Participations per 45 minutes. Thus, all participation volumes are equaled in terms of a constant time unit.

† The differences for three pairs are in the same direction as the total mean difference, these differences have *p* values of .007, .06, and .20. The other two pairs go in the opposite direction, these differences have *p* values of .12 and .73.

‡ The differences for three pairs are in the same direction as the total mean difference, these differences have *p* values of .03, .04, and .72. The other two pairs, in the opposite direction, both have *p* values of .83.

The observers rated that there were significantly fewer communication difficulties among *Indiv coop* than among *Indiv comp* for both the human relations problems and puzzles. Further support for Hypothesis 19 is obtained from the subjects. In answer to the question (C), "Did you find that you had difficulty in getting your ideas across to others?" the ratings of *Indiv coop* expressed significantly less difficulty than did the ratings of *Indiv comp*. The same results were obtained in answers to the following question (C), "Did you find that you had difficulty in trying to follow or get the point of what the others were saying?" Thus, the competitive subjects experienced more difficulty with respect to the spread of common signification, both in the roles of communicators and communicatees.

Hypothesis 21 asserts that there will be more common appraisals of communications in the cooperative groups than in the competitive groups. Table 23.7 presents the evidence for the hypothesis.

The observers rate greater acceptance of one another's ideas in the cooperative groups than in the competitive groups in both kinds of tasks. The subjects' ratings also strongly support the hypothesis. In answer to the questions (C), "How did you react to the suggestions of others?" and "How did the others tend to react to your ideas or suggestions?" the ratings made by *Indiv coop*, as contrasted with those of *Indiv comp*, indicate both significantly more agreement with the ideas and suggestions of others and perception of more agreement from other group members.

Two categories on the Functions Observation Sheets, "evaluator-critic" and "follower," also provide some relevant data, although it should be

TABLE 23.7

DIFFERENCES BETWEEN COOPERATIVE AND COMPETITIVE GROUPS ON DATA RELEVANT TO THE HYPOTHESIS ABOUT COMMON APPRAISALS OF COMMUNICATIONS

VARIABLE	PROBLEM TYPE	TOTAL	
		<i>M diff</i>	<i>p</i>
Acceptance of each other's ideas (A)	H. R.	+1.80	.001
Acceptance of each other's ideas (A)	P	+ .95	.01
Agreement with others (C)	H. R.	+ .81	.001
Agreement by others (C)	H. R.	+ .61	*
Follower (B)	H. R.	+4.34	.01
Follower (B)	P	+2.05	.25
Evaluator-critic (B)	H. R.	-3.36	.04
Evaluator-critic (B)	P	- .95	not sig.

\*The differences for four of the five pairs are in the same direction as the total mean difference; these differences have *p* values of .01, .02, .04, and .38. The other pair, in the opposite direction, has a *p* value of .92.

kept in mind that both categories may contain a few items which are not specifically related to the notion of *common appraisal*. Thus, "evaluator-critic" probably contains some items which are positive evaluations and "follower" includes some items which connote understanding but not necessarily agreement. Nevertheless, for both categories there are significant differences between the cooperative and competitive groups on the human relations problems in the direction of the hypothesis. The differences with respect to the puzzles are in the predicted direction but are not significant.

### Orientation

Hypothesis 23 asserts that there will be more commonality of perception with respect to position and direction to the goal among *Indiv coop* than among *Indiv comp*. The relevant data are presented in Table 23.8.

According to the observers' ratings the cooperative groups were significantly more oriented ("aware of where they are and where they are

TABLE 23.8  
DIFFERENCES IN DEGREE OF ORIENTATION AND ORDERLINESS BETWEEN COOPERATIVE AND COMPETITIVE GROUPS

VARIABLE	PROBLEM TYPE	TOTAL	
		<i>M diff</i>	<i>p</i>
Orientation (A)	H. R.	+1.70	.001
Orientation (A)	P	+1.92	.01
Orderliness (A)	H. R.	+1.99	.001
Orderliness (A)	P	+1.96	.001

going") than the competitive groups for both kinds of tasks. The hypothesis is also given indirect support by the observers' ratings which indicate that the cooperative groups were also significantly more orderly and systematic in their approach to the various problems.

### Productivity

Hypothesis 24 asserts that, since speed of locomotion will be greater in cooperative groups, quantitative productivity per unit of time will be less in the competitive groups. The evidence in Table 23.9 provides striking support. Cooperative groups solve the puzzle problems more

TABLE 23.9  
DIFFERENCES BETWEEN COOPERATIVE AND COMPETITIVE GROUPS ON VARIOUS MEASURES OF PRODUCTIVITY

VARIABLE	PROBLEM TYPE	TOTAL	
		<i>M diff</i>	<i>p</i>
Discussion productivity (A)	H. R.	+1.86	.001
Discussion productivity (A)	P	+1.90	.01
Discussion insight (A)	H. R.	+1.25	.001
Discussion insight (A)	P	+1.72	.02
Time per solution	P	-7.35	.01
		minutes	
Number of words in written product	H. R.	+299	.001
		words	
Average individual productivity (A)	H. R.	+ .15	not sig.
Average individual productivity (A)	P	+ .58	.07
Learning from discussion (C)	H. R.	+ .25	*
Grades on term paper		+2.85	.18

\* Differences for three pairs are in the same direction as the total mean difference, these differences have *p* values of .07, .07, and .39. The two pairs, in the opposite direction, have *p* values of .30 and .45.

rapidly than do the competitive groups and they also produce more on the human relations problems (number of words written in the recommendations are taken as a crude measure of quantity of productivity).

Hypothesis 25 states that qualitative productivity will be higher for the cooperative groups. Clear support is given to this hypothesis by the observers' ratings of discussion productivity (Table 23.9) and by the judges' ratings of written recommendations for the human relations problems (Table 23.10). According to observer ratings, the discussions of the cooperative groups not only came out with more fruitful ideas for handling the problem presented to them, but also their group discussions showed more insight and understanding of the nature of the problem



being posed to them. These differences with respect to group productivity and group insight are significant for both kinds of tasks.

Average individual productivity must not be confused with group productivity. Group productivity ratings referred to the ideas that were agreed upon and accepted as a basis for action by the group. The ratings of average individual productivity show no significant difference for the cooperative and competitive groups on the human relations problems. For the puzzles, there is a difference approaching significance favoring *Indiv coop*. The latter result is probably explained by the fact that the greater communication within cooperative groups meant that individuals were less likely to stay in blind alleys for long periods of time.

TABLE 23.10  
DATA RELEVANT TO HYPOTHESIS THAT QUALITATIVE PRODUCTIVITY WILL BE HIGHER  
IN COOPERATIVE GROUPS

CORRELATIONS AMONG RATINGS OF GROUP PRODUCTS BY THREE JUDGES						
	Judges 1 & 2	Judges 1 & 3	Judges 2 & 3	Average of Correlations		
	.42	.46	.61	.50		
DIFFERENCES BETWEEN COOPERATIVE AND COMPETITIVE GROUPS ON MEAN OF JUDGES' RATINGS						
	Total	Pair 1	Pair 2	Pair 3	Pair 4	Pair 5
Mean difference	+2.04					
<i>p</i>	.001	.02	.001	.54	.01	.05

Table 23.10 presents the ratings of each group for each of the five different problems, as made by three different judges. Although it is evident that there is a considerable unreliability in the ratings, it is also clear that despite this there are significant differences between the paired cooperative and competitive groups.

Hypothesis 26 states that *Indiv coop* will learn more from one another than will *Indiv comp*. Table 23.9 indicates that the cooperative group members in three of the five pairs rated themselves as learning more from the discussion of the human relations problem than did the competitive members rate themselves.

The same kind of results are obtained when one examines the grades obtained by the individuals exposed to each of the experimental conditions. The grades being considered were those obtained on the first term paper handed in by all the subjects. The paper was due on the final week of the experiment. Statistical analysis reveals that the differences are in the predicted direction but not statistically significant.

Thus, the hypotheses predicting greater group productivity for the cooperative groups have received strong support from the data, but the evidence with respect to the hypothesis predicting greater learning for *Indiv coop* is far from conclusive. It should be noted that the discussions took place at the very beginning of an introductory psychology course. Perhaps at such an early stage the subjects were not particularly ready to have cognitive changes induced by fellow members under either of the two conditions.

### Interpersonal Relations

From the basic hypothesis with respect to cathexis, it was derived that *Indiv coop* would be more friendly towards one another in the group meetings than would *Indiv comp* (Hyp. 27). Table 23.11 presents the relevant data.

TABLE 23.11

DIFFERENCES BETWEEN COOPERATIVE AND COMPETITIVE GROUPS IN FRIENDLINESS, AND OTHER RELATED DATA

VARIABLE	PROBLEM TYPE	TOTAL	
		<i>M diff</i>	<i>p</i>
Friendliness (A)	H. R.	+1.26	.001
Friendliness (A)	P	+ .89	.01
How good were contributions of others (C)	H. R.	+ .70	*
Encourager (B)	H. R.	+ .96	†
Encourager (B)	P	+ .20	not sig.
Aggressor (B)	H. R.	-1.16	.01
Aggressor (B)	P	- .64	not sig.
Time taken to learn last names (D)		- .20	.06
Correctness of spelling of last names (D)		+ 5.3	.11

\* Differences for four pairs are in the same direction as the total mean difference; these differences have *p* values of .05, .01, .01, and .01. The other pair is in the opposite direction; its *p* value is .05.

† Differences for four pairs are in the same direction as the total mean difference; these differences have *p* values of .001, .06, .57, and .62. The other pair has a *p* value of .57.

Observers' ratings reveal that *Indiv coop* were significantly more friendly than *Indiv comp* during discussions of both types of problems. The hypothesis receives additional support from the observation of functions during discussion of the human relations problems. A greater percentage of encouraging or rewarding remarks was made in cooperative groups, and a significantly larger proportion of aggressive remarks was made in the competitive groups. The puzzle problems yielded such a low frequency of all emotionally laden functions that no significant differences could be established between groups.

The cooperative subjects in answer to the question (C), "How good were the contributions of others?" rated one another's contributions to be better than did the competitive subjects. This result can also be taken to indicate greater positive cathexis among *Indiv coop*.

The next question of interest has to do with the extent of the generalization of the friendliness shown during the experimental meetings. The question (D), "How much did the weekly small group meetings stand out for you in contrast with the other classes you attend during the week?" is the only relevant measure. The average responses for the cooperative and the competitive groups were not significantly different. On the average, the subjects rated the weekly meetings as, "Thought about some—more prominent in my thinking than some of my other courses, but not more prominent than most of my other courses." Since the experimental sessions were not especially prominent in the lives of the subjects, there is little reason to expect much generalization of cathexis to other areas.

Various measures were taken to test the extent of generalization: ratings of fellow members with respect to desirability as a friend, rating of amount of friendly feeling toward others, time taken to learn first and last names, correctness of spelling of last names, amount of time spent together in outside activities and kinds of activities jointly engaged in outside of class. Table 23.11 presents most of the evidence.

*Indiv coop* learned one another's last names sooner than did *Indiv comp* (as reported on the final questionnaire). They also spelled one another's names more nearly correctly, but the size of this difference is significant at only the 11% level of confidence. No differences were obtained with regard to learning first names nor in the frequency or kinds of outside activities undertaken together. At the end of the experiment, *Indiv coop* rated themselves as being more friendly towards one another than did *Indiv comp*. These differences, however, are clearly not statistically significant. The data thus indicate that little generalization of cathexis occurred. The relative lack of generalization was probably due to (a) the relative lack of importance of the goals involved in the experiment and (b) strong restraining forces against any inclinations toward increased sociability which might have resulted from the experimental situation.

Hypothesis 28 states that the group and its products will be evaluated more highly by *Indiv coop* than by *Indiv comp*. Table 23.12 presents the relevant data. In answer to the question (C), "Did the group help your thinking?" the ratings revealed significantly more help among the cooperative than among the competitive members. Similar results were obtained from the question (C), "How good do you think the group's product was?"

According to Hypotheses 29 and 30 there should be a greater percentage

of group functions among *Indiv coop* and a greater percentage of individual functions among *Indiv comp*. The data in Table 23.12 support these hypotheses with respect to the human relations problems but not the puzzles. The lack of difference for the puzzles suggests that (a) the objectively demonstrable solution of the puzzles makes it more difficult for individuals to produce the rationalizations necessary for "civilized" blocking or aggressive behavior, and (b) a demonstrable solution compels a certain degree of agreement and acceptance, making group functions more likely. Thus, the competitive groups have a significantly greater percentage of group functions in the puzzles than in the human relations problems and a slightly smaller percentage of individual functions in the puzzles. Similar, but less marked, differences are found for the cooperative groups on the two kinds of problems.

TABLE 23.12

DIFFERENCES BETWEEN COOPERATIVE AND COMPETITIVE GROUPS ON KINDS OF FUNCTIONS PERFORMED AND EVALUATIONS OF THE GROUP

VARIABLE	PROBLEM TYPE	TOTAL	
		<i>M diff</i>	<i>p</i>
Group help to thinking (C)	H. R.	+1.03	.001
How good was group product (C)	H. R.	+1.22	.01
Total group functions (B)	H. R.	+4.64	*
Total group functions (B)	P	+ .08	not sig.
Total individual functions (B)	H. R.	-3.87	.05
Total individual functions (B)	P	-2.10	not sig.
Blocker (B)	H. R.	-1.40	.01
Blocker (B)	P	- .25	not sig.
Self-defender (B)	H. R.	-1.03	.05
Self-defender (B)	P	- .10	not sig.

\* Differences for four pairs are in the same direction as the total mean difference; these differences have *p* values of .001, .001, .01, and .01. The other pair, in the opposite direction, have a *p* value of .05.

Hypothesis 33 states that *Indiv coop* will perceive themselves as having more favorable effects on fellow members than will *Indiv comp*. Table 23.13 indicates that the cooperative subjects saw their fellow members as reacting more positively to their ideas, the competitive members perceived that their ideas were being ignored more frequently, and the cooperative members felt that their contributions would be evaluated more highly.

Hypothesis 34 asserts that there will be greater internalization of the attitude of the generalized other by *Indiv coop* than by *Indiv comp*. Most of the experimental data already discussed are relevant to this hypothesis, but, in the more restricted sense of identification with the attitudes of others, two complementary measures, the feeling of obligation to others



and the desire to win the respect of others, are especially pertinent. Table 23.13 presents data which indicate that *Indiv coop* felt more obligated as members of a group to participate in joint effort than did *Indiv comp*. The desire to win the respect of the other members also played more of a role in the motivation of *Indiv coop* than *Indiv comp*.

TABLE 23.13

DIFFERENCES BETWEEN COOPERATIVE AND COMPETITIVE GROUPS IN PERCEPTION OF EFFECTS ON OTHERS AND IN FEELING OF OBLIGATION TO OTHER MEMBERS

VARIABLE	PROBLEM TYPE	TOTAL	
		<i>M diff</i>	<i>p</i>
How did others react to your ideas? (C)	H. R.	+ .61	*
How frequently did others react? (C)	H. R.	+ .49	†
How will others rate your contributions? (C)	H. R.	+ .49	‡
Strength of feeling of obligation to others (D)	H. R.	+2.80	.01
Strength of feeling of obligation to others (D)	P	+1.55	.10
Strength of desire to win respect of others (D)	H. R.	+1.53	.09
Strength of desire to win respect of others (D)	P	+2.38	.001

\* Four pairs are in the same direction as the total mean difference, the differences for these pairs have *p* values of .01, .04, .12, and .38. The other pair has a *p* value of .92.

† Four pairs are in the same direction as the total mean difference, with *p* values of .01, .03, .04, and .18. The other pair has a *p* value of .02.

‡ Four pairs are in the same direction as the total mean difference, with *p* values of .01, .02, .06, and .28. The other pair has a *p* value of .33.

## Summary and Conclusions

### Basic Hypotheses

The evidence for the basic hypotheses is, for the most part, indirect. Data collected to test the more specific hypotheses about group functioning also, in effect, test the basic hypotheses.

The experimental findings give support to the following hypotheses:

1. *Indiv coop* will perceive themselves to be more promotively interdependent and *Indiv comp* will perceive themselves to be more contritely interdependent (Hyp. 1).
2. There will be greater substitutability for similarly intended actions among *Indiv coop* than *Indiv comp*. This hypothesis is supported by data obtained in connection with Hypotheses 7 and 9, but the data are ambiguous with respect to Hypotheses 8 and 16.
3. A larger percentage of actions of others will be positively cathected among *Indiv coop*; a larger percentage of actions of others will be negatively cathected among *Indiv comp* (Hyp. 3).
4. There will be a greater positive inducibility among *Indiv coop* than among *Indiv comp* (Hyp. 4).

5. *Indiv coop* will exhibit more helpfulness and *Indiv comp* will exhibit more obstructiveness (Hyp. 5).

Thus, all in all, the theory of cooperation and competition has been given considerable backing by the present experimental investigation.

### Group Functioning

The results, with respect to aspects of group functioning, indicate that *Indiv coop* showed more of the following characteristics than did *Indiv comp*: (a) coordination of efforts; (b) diversity in amount of contributions per member; (c) subdivision of activity; (d) achievement pressure; (e) production of signs in the puzzle problem; (f) attentiveness to fellow members; (g) mutual comprehension of communication; (h) common appraisals of communication; (i) orientation and orderliness; (j) productivity per unit time; (k) quality of product and discussions; (l) friendliness during discussions; (m) favorable evaluation of the group and its products; (n) group functions; (o) perception of favorable effects upon fellow members; and (p) incorporation of the attitude of the generalized other.

*Indiv comp* showed more (a) production of signs in the human relations problem, and (b) individual functions.

No significant differences were found in the (a) amount of interest or involvement, (b) amount of specialization of function, and (c) amount of learning (though the trend is in favor of *Indiv coop*). Nor did the data reveal any striking developmental differences with time.

### Practical Implications

To the extent that the results have any generality, greater group or organizational productivity may be expected when the members or subunits are cooperative rather than competitive in their interrelationships. The communication of ideas, coordination of efforts, friendliness, and pride in one's group which are basic to group harmony and effectiveness appear to be disrupted when members see themselves to be competing for mutually exclusive goals. Further, there is some indication that competitiveness produces greater personal insecurity through expectations of hostility from others than does cooperation. The implications for committees, conferences, and small groups in general appear fairly obvious.

Also, in light of the results of this study, it seems that educators might well reexamine the assumptions underlying their common usage of a competitive grading system. One may well question whether a competitive grading system produces the kinds of interrelationships among students, the task-directedness, and personal security that are in keeping with sound educational objectives.

## REFERENCES

1. Barnard, C. I. *The functions of the executive*. Cambridge: Harvard Univ. Press, 1938.
2. Benne, K. D., & Sheats, P. Functional roles and group members. *Journal of Social Issues*, 1948, 4, No. 2, 41-49.
3. Koffka, K. *Principles of gestalt psychology*. New York: Harcourt, Brace, 1935.
4. Newcomb, T. M. Autistic hostility and social reality. *Human Relations*, 1947, 1, 69-86.

## Self-oriented Needs in Discussion Groups

Nicholas T. Fouriezios, Max L. Hutt, and Harold Guetzkow

Today there is recognition that the outcomes of a group's behavior are not determined merely by the intellectual aspects of its process—by its semantic efficiency and its problem-solving ability. Most group psychologists admit the importance of motivation as a factor in determining the nature of the processes which go on within the group, yet little work has been done to make it possible to study the operation of the motivational processes in the group situation. This paper adapts a common conceptualization of motivational factors and suggests a technique whereby one of these motivations may be measured in group discussion situations.

The behavior of individuals in a group may be regarded as generated from one or both of two sources. First, the behavior may be induced mainly by the requirements of the group situation, e.g., when a person accepts the chairmanship of a group because the rest of the group wants him to. In this manner he feels he can serve the group. Second, the behavior may be generated mainly from within the individual, e.g., an individual moves to get himself elected chairman of a group because of certain ego-related tensions within himself. The position will give him desired prestige or an opportunity to dominate others. This motivation from within may be conscious or unconscious, while the desire to aid the group is secondary but not necessarily absent. This twofold division of motivational factors loosely parallels the distinction between task- and ego-orientation made by Lewis (1). Although the self-enhancing and self-defending motives may express themselves in various ways, the personal

Dr. Harold Guetzkow condensed for inclusion here the more technical article which originally reported this research. For more complete treatment the reader is referred to: Measurement of self-oriented needs in discussion groups. *Journal of Abnormal and Social Psychology*, 1950, 45, 682-690. This research was a part of the Conference Research project at the University of Michigan sponsored by the Office of Naval Research under the general direction of Dr. D. C. Marquis. This article is reprinted by permission of the authors and the American Psychological Association.



welfare motives per se (as desire for larger income because of economic wants, and interest in shorter hours and longer vacations because of recreational needs) are not conceptually included in the self-oriented needs. In line with this conceptualization, an empirical effort was made to evaluate the extent to which participant behavior in the group is motivated directly from the individual's self-oriented need system. This behavior is not necessarily directed toward a group goal or the satisfactory solution of a group's problems. Self-oriented need behavior is directed primarily to the satisfaction of the need itself, regardless of the effect on the attainment of the group goal.

### Description of Self-oriented Needs

Five areas of need constitute the framework within which individuals are classified. The areas were selected by the experimenters from a large number used by observers in an earlier pilot study. They are designated primarily to serve as a guide for the rater's appraisal of the over-all self-oriented need expression of an individual during a meeting.

1. *Dependency.* Dependency needs include indications of (a) need for dependence on authority, and (b) need for succorance.

The first of these, dependence on authority, is typified by the individual who is submissive in the face of authority and who continually relies upon authority, especially in difficult situations. For instance, a participant who demands rigid structuring of his group along the lines of parliamentary procedure when the occasion does not warrant such formalizing is taken as having need for dependence on authority. The dependent person continually looks to the chairman for support.

An example of expression of Dependence on Authority are continual references, such as, "Mr. Chairman, would you clear this up for me?"

By succorance is meant generalized dependency, as contrasted with dependence on authority alone. There is a desire to conform continually to the wishes of others, whether they are in authority or not. The individual who tends always to the supporting role is considered as exhibiting a need for succorance. He may or may not give reasons for supporting what others say. An example of Need for Succorance is a statement like, "In regard to what Mr. X has just said, I feel it is very good because he is usually right about these things."

2. *Status.* Status needs are exemplified by the individual who wants formal designations, the individual who makes bids to obtain a "title for title's sake," not because he wants primarily to serve the group. The individual with strong status needs works to obtain and maintain the status he desires. Within this area fall indications of aspiration in social situations. To differentiate between behaviors arising from the self-oriented need for status and behaviors that have a legitimate basis in the group's situation, the rater must take advantage of such cues as the individual's presentation of arguments, his reaction to criticism from other members, his emotional orientation while making contributions—in effect, the total situation. An example of the Need for Status is a statement like, "I was a member of a coordinating committee once and we did some wonderful work in this field."

3. *Dominance.* In this category are included expressions of (a) intellectual dominance and (b) dominance in social situations.

By expression of intellectual dominance is meant an individual's attempts to show intellectual superiority over one or more members of his group. The participant may attempt openly to assert this intellectual dominance, or he may do so more subtly by persistently trying to get his own ideas accepted. An example of Intellectual Dominance might be, "But the logic of the situation demands you adopt my conclusion."

Dominance in social situations includes attempts to control and direct in the social situation, as exemplified in "social bossiness." Situations with "authoritative" leadership tend to be of this kind. The leader here controls with little concern for the needs of the group, since he is mainly oriented to satisfy his need to dominate. The dominance situation, in extreme, is noted in conference process when one individual refuses to hear arguments against his own ideas and proceeds to force the group to follow his plan. An example of Dominance in Social Situations might be a dogmatic, overpowering assertion, "This is the way it must be done."

It is important for the rater to distinguish between dominance based on ego needs and dominance which has more situational basis. In the former instance the dominant individual is motivated by his need to assert authority over others. In the latter case, an individual may legitimately move to bring about a different structuring of the group because the group has strayed from fruitful approaches to its goal, or the leader may halt an argument because of time limitation.

4. *Aggression.* Here are included expressions of (a) aggression against authority and (b) *extrapunitive*ness.

Indications of aggression against authority are found in the expressions of hostility and rebelliousness directed by the participant to his group leader or some outside authority. The individual who resents and protests against structuring in the group, no matter how minor, by the leader or other sources of authority, is considered as expressing aggression against authority. Comments about the inhibiting and "meddlesome" nature of authority may be verbalized, e.g., "Why are they trying to bother us with these silly rules anyway?" Another example of Aggression against Authority is, "We can't do a thing with that kind of boss."

Extrapunitive<sup>ness</sup> refers to generalized aggression. Here the aggression is not directed solely toward authority but against the external world or the environment. The expressions of extrapunitive<sup>ness</sup> are detected in the interpersonal relationships of the individual. This individual's contributions may be entirely of the opposing kind. The participant who characteristically reacts negatively in his affective relationships, the individual who tends to "tear down" the contributions of others, is taken as expressing the Need for Extrapunitive<sup>ness</sup>, e.g., "I disagree. I think that all you guys are on the wrong track!" and he says this with great feeling.

5. *Catharsis.* In this category fall expressions of need for personal unburdening. Indications of need for catharsis are obtained when there is continual self-reference in the contributions of the participant. This behavior is found in the individual who expresses his conflicts by acting them out. In discussion situations when an illustration of a certain type of activity is in order the individual will exhibit need for catharsis by giving overly elaborate descriptions. This individual does not want to dominate, he just wants to talk. He usually becomes quite emotionally involved in what he is saying. A participant who continually refers to personal experiences when the situation does not require such contributions

is probably indicating Need for Catharsis, e.g., "Once I was in a situation where I was forced to. . ."

### Utilization of Cues

The emphasis of this classification of needs is not on the categories per se, but on the categories as a stable background or framework within which the observer can estimate the extent of operation of an individual's self-oriented need system in a particular group situation. The above materials were used as a "cue manual" in training observers. The trainer emphasized that reliable rating of self-oriented needs depends to a great extent on the development of the observer's ability to utilize the latent meaning of the many cues available in group situations. The observer makes his ratings in relation to the immediate situation with which he is concerned. He attempts to understand the frame of reference of the individual making a statement. The validity of his ratings will depend upon his ability to discriminate between what appears to be a "rational" reaction calculated primarily to aid the group and what appears to be predominantly a self-oriented need expression, despite its superficial group-centered character. The observer evaluates the whole field in which the participant's behavior occurs before the ratings can be made.

The observer's attention is directed not only to the content of the participant's contribution but also to the affect behind the contribution—the "feeling tone" that the contribution determines. For example, a participant says, "You are pretty good, aren't you?" This may appear to be a statement of praise as far as the content is concerned, but it may be uttered in such a way that expresses much aggression. Ruesch and Prestwood (2) have empirically demonstrated the importance of such inflectional and timing nuances in their study on the communication of anxiety.

### The Rating Scale

The rating scale used by the observers in the study reported here was an 11-point scale ranging from 0 (no expression of self-oriented need) to 10 (all behavior of the self-oriented type). The scale breaks down as indicated below.

- 0— No expression of self-oriented need
- 1—
- 2— Some slight indication of self-oriented need behavior
- 3—
- 4— Some self-oriented need behavior indicated but not predominant
- 5—

- 6—Considerable self-oriented need behavior
- 7—
- 8—Almost all behavior of self-oriented type; a great deal of expression
- 9—
- 10—All behavior of the self-oriented type

The self-oriented need observer devotes almost all his observational time to the tallying of particular instances of the expression of the five different types of needs. Then, at the conclusion of the conference, he makes a subjective, integrating appraisal of his tallies in the form of a single, over-all rating on the scale shown above. Extensive use of these ratings was made in 72 actual decision-making conferences in governmental and industrial organizations. These groups varied in size from 5 to 17, with an average of about 10 persons in each.

When the ratings of an observer of the over-all self-oriented needs of almost 700 persons from the 72 groups are plotted in a frequency distribution, the curve does not differ significantly from a normal distribution as tested by chi-square. Various reliability studies have been made, obtaining correlations between two observers rating the same group members. The test-retest coefficients ranged from .67 to .96. Reliability is, of course, quite dependent upon the amount of training the observers have had.

### Computation of Group Scores on Self-oriented Need

Thus far, self-oriented need ratings have been discussed only at the individual level. That is to say, each individual in a group is given his own rating by the observer. For some analyses, a group's score on self-oriented needs may be obtained by averaging the scores assigned all the individuals in the group. However, direct ratings of the amount of self-oriented needs displayed by a group may also be obtained. Observers watching groups may rate the extent to which each group's process is characterized by the expression of self-oriented needs. The scale in this case also ranges from 0 to 10; the 0 point represents an entirely objective meeting and the 10 a discussion entirely permeated by self-oriented need expression. The reliability of three observers on a sample of 30 groups averaged .81 for the "group score."

In the study reported here, three observers watched the meeting simultaneously and then gave each discussion a "group score." One special observer also made individual scores, which were averaged into the "average individual" score. The correlation between the direct rating of the group's self-oriented needs level and the group rating obtained by averaging the scores assigned to all the individuals in the group was .67 when the two types of scores were compared over the 72 groups.



## The Relationship of Self-oriented Need Expression to Other Group Measures

There are various ways of measuring the result of a small face-to-face meeting of executives "in conference." A most cogent case can be made for the use of appraisals by the participants who worked together in the meeting—appraisals of the extent to which they felt satisfied with the meeting as a whole, with the decisions which were reached, with the procedures used to reach them, and with the chairman's handling of the meeting. Ratings on each of these outcomes can be obtained from the participants and then averaged to give group scores on each facet of outcome. These four types of ratings can then be compared with the average individual and group self-oriented need scores described above.

Correlations computed between each of the two observer estimates of need and each of the four measures of participant satisfactions indicate in every case a statistically significant (all but one at the 1% level) negative relationship between the variables. In other words, those groups with the highest scores on self-oriented needs rated themselves lowest on the satisfaction measures; groups which exhibited more self-oriented need behavior were least satisfied with the meeting in general, with the decisions reached, with the way in which the group reached its decision, and with the chairmanship of their meeting. The correlations<sup>1</sup> range from  $-.37$  to  $-.49$  when the satisfaction measures are correlated with the mean of the three observers' ratings of self-oriented needs, and from  $-.28$  to  $-.38$  when the satisfaction measures are correlated with the average of the single observer's rating of the individuals comprising the groups.

Other measures of outcome may be obtained from indices of productivity. For example, in the field study the groups with high need ratings tended to complete fewer of the items considered at their meetings than the low groups did in their meetings ( $r = -.32$  for mean of three observers and  $r = -.15$  for special observer's average of individuals in the group); yet, their meetings tended to last longer ( $r = +.32$  and  $+.39$ ). Thus, on the basis of both the participant-satisfaction measures as well as on objective measures of productivity, the self-oriented need rating technique provided a predictor of conference outcome.

By comparing the need estimates with other measures of group process, it is possible to delineate to some extent the meaning of the self-oriented need ratings. In the earlier part of this paper, it was indicated that moves to satisfy the self-oriented needs may be made regardless of their effect upon group process. Thus, it is not surprising to note that there is a correlation of  $+.73$  between the three observers' mean need estimate and

<sup>1</sup> All correlations reported hereafter are significant with an  $N$  of 72 if  $r = .30$  at the 1% level, or  $r = .23$  at the 5% level.

the amount of group conflict. Groups which are high in expressed self-oriented need tend to perceive themselves as less unified than do the low need groups ( $r = -.55$ ).

In describing the nature of self-oriented needs, an attempt was made to distinguish between the self-enhancing and the self-defending needs and those motives arising out of concern for personal welfare, as threats to such matters as personal remuneration or vacation time. In light of this distinction, one should note the correlation of  $+.46$  between the need estimates and the extent to which the groups regarded themselves as having a stake in the way the agenda problems were settled; yet, the correlation between the way in which the participants rated the importance of the agenda and the observers' mean need estimate for the groups was  $+.07$ . This would indicate that the self-oriented needs estimates reflect personal involvement, arising from the agenda problems, but are relatively uncontaminated by situationally induced motivations which make particular agenda regarded as important to the industrial or governmental organization to which the participants belong.

### Summary

The materials presented in this paper demonstrate that the expression of self-oriented needs can be rated reliably in the discussion-group situation. Examination of data collected on 72 decision-making conference groups indicates that the self-oriented needs of the participants are negatively correlated with their satisfaction with the outcome of the conferences, and are related to various processes which occur during the meeting itself. Thus a rating technique has been developed to study an aspect of the motivational factor in group psychology, an area somewhat neglected because of its technical inaccessibility.

### REFERENCES

1. Lewis, Helen B. An experimental study of the role of the ego in work. *Journal of Experimental Psychology*, 1944, 34, 113-126 and 195-215.
2. Ruesch, J., & Prestwood, A. R. Anxiety: its initiation, communication, and interpersonal management. *Archives of Neurology and Psychiatry*, 1949, 62, 527-550.

## The Recall of Interrupted Group Tasks: An Experimental Study of Individual Motivation in Relation to Group Goals

Murray Horwitz

The general problem considered in this research is the following: Can the motivational concepts which have been developed for individuals who are acting for their *own goals* be applied to individuals who are acting so that a group will achieve *group goals*?

The concept of group goals appears in one form or another in most theories of group functioning. Barnard's (2) concept of group effectiveness and Homans' (7) of group activities both involve the notion of particular outcomes which the group can achieve in its external environment. French (5), in his studies of group productivity, makes explicit use of the concept of group goals, but distinguishes conceptually the two types of goals by locating each in a different type of environment. He follows Lewin (13) in describing the individual's behavioral environment in terms of the possible activities existing for the person, and locomotion through this environment as a change in the person's position in the sense of moving from one activity to another. The individual's goal is treated as a consummatory activity which terminates a sequence of other activities which lead up to it. Analogously, the group's behavioral environment is regarded as consisting of possible activities in which the group can engage. Group activities, however, are carried on, not by the separate activities of individual members, but by the organization of these individual actions within the group. Locomotion toward a group goal involves a change of position by the group, and for this reason, although a member may contribute in some degree to the group's moving toward its goal, neither the locomotion nor the goal can be said to be achievable by any individual in the group. As in the case of an individual goal, the group

This chapter is condensed from a fuller article appearing under the same title in *Human Relations*, 1953, 6. It is reprinted here by permission of the author and *Human Relations*.

goal is consummatory in that it terminates a sequence of group activities.

A number of studies have examined the motivation of group members as related to group goals. Lippitt (16) found that in certain types of children's groups members persisted in working on a group task although the leader had left the room, while in others work ceased when pressure from the leader was removed. The studies by Katz (9) and the numerous investigations of "group identification" reported by Sherif and Cantril (21) indicate that under some conditions members can become motivated in terms of group goals, while under other conditions they act without such motivation. From the standpoint of motivational theory in individual psychology, these studies raise the problem of how goals which represent changes in the state of a group can be conceptually linked with goals which are consummatory activities of the person himself.

In individual psychology, the existence of some internal system in tension, e.g., a need, is usually taken as a necessary condition for the person's having a goal. According to this view tension systems result in the individual's "cathecting" some goal in the environment, and tendencies are then aroused for the person to locomote toward this desirable outcome. Lewin (12) has given a rather elaborate systematic treatment of the properties of tension systems, based primarily on experiments which have treated the individual in isolation from the social field. In measuring tension systems, the Lewinian experiments on individuals involve the general procedure of providing the subject with a series of tasks which he desires to complete, having the subject engage in activities directed to this end, and interrupting some of the tasks but allowing others to be completed. There are several features of this experimental procedure which prevent our generalizing the results obtained to the behavior of individuals in a goal-setting group:

1. The "interrupted task" experiments indicate that individuals develop tension systems coordinated to reaching their own goals. Group goals, as we have seen, cannot be attained by an individual. The question is raised whether individuals can develop tension systems coordinated to the group's attaining its goal; and, if so, does the group's reaching its goal reduce tension in the same way as "consumption" by the individual?
2. In experiments with individuals the subject engages in a sequence of activities which will enable him to complete the task. The individual's environment is regarded as a stable and relatively invariant frame of reference, locomotion being treated as the person's changing his position within this environment. A characteristic of behavior in a social field, however, is that desirable or undesirable states of affairs may come about by changes in the social environment, independently of the individual's action. A change in the person's position, i.e., locomotion, can occur not only by his entering into a new activity, but by the "ground moving under



his feet." Even though the person is himself inactive, he may find himself psychologically "carried" toward or away from a goal or toward or away from an avoidance by the action of the group. The results of experiments with individuals do not permit us to answer the question: Will tension systems be reduced where the person has not actively completed the task but has to some degree been "carried" by the group into a condition in which the task has been completed?

3. In the individual experiments the tension systems which are measured are coordinated to completing a task. In a group situation a person may wish to avoid completing a task which he may nevertheless be obliged to complete by virtue of his membership in the group. If tension systems exist coordinated to avoiding a task, one would expect these avoidance tensions to have somewhat different properties from goal tensions; for where non-entry into the region of negative valence should reduce an avoidance tension, non-entry into the region of positive valence should leave the goal tensions unreduced. On the other hand, entering a region of negative valence should leave an avoidance tension unreduced, although entering a region of positive valence should reduce the goal tension. The experimental procedure used with individuals has made it difficult to investigate avoidance tensions. Do tension systems, in fact, exist for avoidances as well as goals? If so, what are the properties of avoidance tensions?

4. In the individual experiments, the subject is either allowed to choose his own tasks, or is provided tasks in which he will be interested. However, a group may set a goal in the absence of an individual member's tension system, or even in opposition to it. Thus, differences may occur between the particular goals set by the group and the goals which the individual desires the group to set. What, if any, are the effects on tension systems of members' attitudes toward undesired group goals?

### Previous Research

Zeigarnik (22), in the earliest experimental work using the tension system construct, coordinated an inner-personal system in a state of tension to the person's striving toward a goal. If the person reaches the goal, the tension is assumed to be reduced; if he is interrupted short of the goal, the system remains in a state of tension. Zeigarnik demonstrated that interrupted tasks are more frequently recalled than completed tasks.

The question of the effects of events in the social field on the arousal of tension systems in the person was first explicitly raised by Adler and Kounin (1). These investigators found that another person's unfinished task failed to arouse tension systems in an observer. Lewis (14) was justly critical of the conclusions drawn from the negative results of this experi-

ment, in which there was little interdependence between the two individuals involved. Lewis set up an experimental situation in which a subject worked on a set of tasks, half of which he finished, the other half being interrupted by a cooperating partner who proceeded himself to finish the tasks. No significant difference was found between recall by a subject of tasks which he completed personally and those which were interrupted and completed by his partner. The result is interpreted to mean that one's tension-system can be reduced by another's reaching his own goal. This still leaves open the question whether tension systems can be aroused for non-personal goals. In a second experiment, Lewis and Franklin (15) had the subject and one of the experimenters work together on the tasks. The second experimenter interrupted half the tasks, setting them aside. The number of subjects who recalled more interrupted than finished tasks proved to be significantly above chance. This experiment touches directly on the question: Given a group goal does an individual develop tension systems coordinated to the group's reaching its goal?

Unfortunately, although this second experiment points to a method for investigating the question, it does not provide the answer. In analyzing the task structures of the 18 problems, Lewis indicates that some of the problems were seen by the subjects as allowing the two partners differential responsibility for the results. Tasks which required an exchange of ideas between the partners might not, for example, incorporate some of the subject's ideas in the solution. They might, therefore, be regarded by him as unfinished, leaving him with an undischarged tension. Other tasks might be seen as consisting of separate halves, one belonging to one partner and the other to the other. In the words of one subject, "Some we divided up. You finished your part and I finished mine." One cannot, therefore, determine whether the tension systems aroused in Lewis' experiment were related to a desire to complete a group task or to complete some part of a group task which was regarded by the individual as his personal goal.

## Experimental Procedure

### *Subjects*

The subjects were female students recruited in groups of five from sororities at the University of Michigan. There were 18 such groups, two of which lacked one member. The experiment was explained as a test of group cooperativeness which would be judged by the quality of the group's performance in working together on a number of jigsaw puzzles. The situation was presented as a contest in which each team represented its sorority. In the main the teams consisted of volunteers, although in

some instances they contained persons specifically designated by sorority officers.

### *Developing Motivation for the Group Task*

Upon entering the experimental room the subjects were engaged in a group discussion for about 15 minutes, designed to heighten their awareness as group members. After the five subjects appeared to be thoroughly involved in the discussion about their group, they were asked to take seats in one of five booths set side by side. Partitions between them prevented subjects seeing one another, but all could see the experimenter who took his place at a table in front of the booths. At each workplace within a booth was a one-page questionnaire, entitled "Test on Group Loyalty," which was aimed at increasing the subjects' involvement in working toward a group goal. The questionnaire contained five scales on which the subjects were asked to rate "the loyalty and team spirit of your group," "your respect for the will of the group," "your readiness to go along with a group decision with which you disagree," and finally, "how much you desire the group to do well on this test."

### *Explaining the Procedure on the Task*

A cardboard poster (size 14" x 14") was attached by means of a spring clip to a display board on the experimenter's table. Drawn on the poster was the outline of a figure, sectioned into five parts to represent a jigsaw puzzle. There were 17 such figures, two of which were used for demonstration purposes. The group's task was to attempt to direct the experimenter in filling in each of these "target" figures one piece at a time. Each subject communicated with the experimenter by a system of signals without knowledge of what others in the group were signaling.

In an envelope at her workplace each subject had four differently shaped pieces of cardboard, each of which was cut out to correspond with a section of the jigsaw "target" figure. By holding up one of these pieces, the subject could signal to the experimenter which section of the figure should be filled in. According to the instructions, if a given number of people and *no more* than that held up the same piece then the corresponding section of the jigsaw figure would be filled in by the experimenter. The effect of this rule was that those subjects who had not held up the piece could claim credit for keeping the number below the maximum, so that it was impossible to say that any member contributed more than another to the successful placing of a piece. The subjects would hold up their choices on successive trials, and the experimenter would announce whether or not the correct number of subjects were holding up the same

piece. The trials were continued until the experimenter announced that the correct number of subjects were holding up a given piece, whereupon the experimenter would fill in the corresponding section of the jigsaw figure. The group then engaged in a second series of trials until they succeeded in filling in another section of the figure. This process continued until the entire figure was completed.

### *Explaining the Method of Voting and Scoring*

After the procedure had been explained to the group, the method of scoring was described. The method entailed taking a vote at the midpoint of each of the 15 puzzles, and was designed to allow members to express their personal decisions either for or against completing the puzzle.

Two demonstrations were given to enable the subjects to learn the procedure in solving the task, and to set up the routine on voting. Votes were always taken after two of the five pieces had been placed on the figure, the experimenter announcing, "I have the basic score. Does the group want to stop here or complete the puzzle?" The subjects voted, without knowledge of how their fellow members were voting, by raising their right hands if they wished to continue work or their left hands if they wished to stop. The experimenter then announced the outcome of the vote. If the announced majority decision was to "complete the puzzle," work was continued in trying to place the third piece; if the announced decision was to stop, the puzzle was set aside, and work was begun on the next puzzle.

### *Administering the Experiment*

In signaling their individual choices, both in filling in the figure and in voting, the subjects could not see one another and had to depend entirely on the experimenter for announcement of the results. The experimenter was therefore able to make his announcements according to a prearranged experimental plan. Standard sequences for filling in the various sections of the figure were planned in advance for all groups. After from four to six trials, irrespective of the actual pieces being held up by the subjects, the experimenter would announce that the correct number of subjects were holding up the piece which had been selected in advance, and the experimenter would then set this piece on the figure. Although nothing the group did made any difference in how the pieces were being placed on the figure, the experimenter's control of the "feedback" served to maintain the illusion that the group was solving the task in its own way. In a similar fashion, it was possible to follow a prearranged experimental plan in announcing the results of the voting. On five puzzles



selected in advance, no matter how the group actually voted, the group was told that a majority had voted "no," or *not* to go on with the work. On 10 selected puzzles, the group was told that a majority had voted "yes," in favor of continuing work. Of these 10 tasks, the group completed half, and half were interrupted by the experimenter. The interruption, which came in the middle of work on the third piece, was described as temporary and the subjects were told they would return to their work later.

There were thus three treatments for the 15 tasks: an announced "yes" vote, followed by completion of the task (designated hereafter as *Y-C*); an announced "yes" vote, followed by partial completion and interruption (designated as *Y-I*); and an announced "no" vote, with work stopping (designated as *N*). At the end of the series of tasks, the subjects were requested individually to recall the names of the jigsaw figures. The instructions were designed to minimize the recall as a "memory test" which, as Zeigarnik (22) has shown, tends to equalize recall of finished and unfinished tasks.

The lists of recalled tasks constitute the basic data of the experiment. Each task on a subject's list could be identified as receiving a specific one of the three experimental treatments. Each type of task could be further broken down into two groups, according to whether the subject's personal vote had been "yes" or "no."

### Experimental Design

The strength of recall of tasks *for a given treatment* is measured by the ratio:

$$\frac{\text{Number of recalled tasks}}{\text{Total number of tasks in treatment}}.$$

Since recall will be affected by the serial order of the tasks and by the "intrinsic" recall value of each figure, it was necessary to equalize these two factors among the three treatments. This could be achieved by presenting the 15 figures in the same order for all 18 groups, but alternating the treatment in successive groups. Thus a given task would be treated in one group as a *Y-C* task, in the next group as a *Y-I* task, and in the next as an *N* task.

Certain departures from this scheme were required by the following additional experimental requirements:

1. The first puzzle in the series should be a *Y-C* task, since an initial "no" vote might suggest to the subjects that their fellow members were rejecting the experiment, and an initial *Y-I* treatment, in which the experimenter interrupted the task, might cast doubt on his intention to respect the group's decision.

2. No two *Y-I* tasks should succeed each other without the interposition of a *Y-C* task in order to avoid any suggestion that the experimenter intended consistently to deny the subjects' decision to complete a task.

3. No contiguous tasks in the series should receive the same treatment.

In summary, each subject was exposed to 15 tasks, five tasks in each of the three treatments *Y-I*, *Y-C*, and *N*. The ratio of tasks recalled within a given treatment to total tasks within that treatment was computed for each subject. The means of these recall ratios were computed for the 15 subjects belonging to the three groups within a complete rotation. This yielded three scores representing strength of recall of *Y-I*, *Y-C*, and *N* tasks, respectively. Since 18 groups were employed, we have a total of six rotations or, in effect, six replications of the experiment.

## Theory and Results

### *The Psychological Situation of the Group Member*

The group goal for these competing teams can be characterized as "getting as many points as possible." This goal can be represented in a social space as a consummatory activity toward which the group is locomoting. If the group votes "yes," the path along which the group is acting may be represented as one in which the activity, "completing the task," is connected with the goal. If the group votes "no," the activity of "completing the task" is connected with a region of negative valence, namely, "losing points."

One can deal with these group activities entirely within a social space without reference to the life space of any individual member. Nevertheless, to the extent that the instructions and recruiting procedures of the present experiment were effective, we can say that each subject had a personal goal of seeing the group obtain the best possible score. Within the individual's life space this goal can be represented as a state region<sup>1</sup> which can be designated, "condition where the group has gained points." Whether or not the person finds himself "carried" into this region of his life space depends in the present situation on events in the group or social space.

At the time of voting whether or not to complete the puzzle, the psychological situation of members who vote "yes" can be represented as in Figure 25.1a. This representation indicates that any one person so voting believes that he can locomote through activity region *C*, "working on the task with others," into the state region *D*, "condition where the group has completed the task." In view of the member's belief about the conse-

<sup>1</sup> We follow Lewin here as opposed to Leeper (10) in coordinating states as well as activities to regions in the life space.

quences of completing the task, region *D* is included in the region of positive valence, *D'*, "condition where the group has gained points." The shaded region inside the person, *t*, (tension for completion) indicates the existence of a tension system corresponding to the person's desire to see

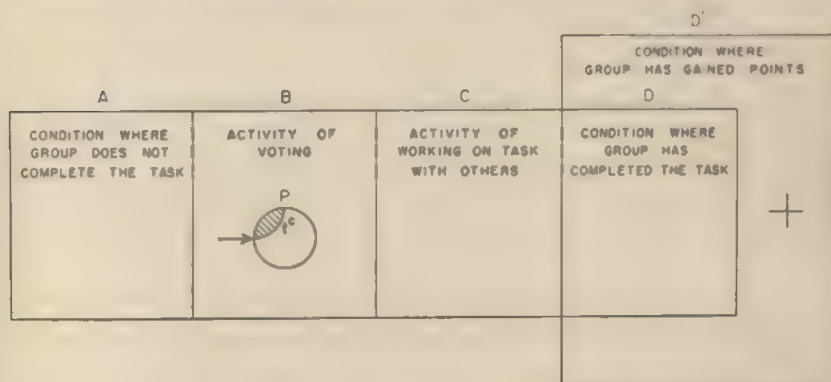


FIG. 25.1a. The psychological situation of the member in case of a "yes" vote. the task completed. If the person enters the region of task-completion, *D*, the tension system, *t*<sup>c</sup>, should be reduced.

Figure 25.1b represents the situation of members who vote "no." Here the person believes that entering region *D* will entail a loss of points. Therefore region *D* is included in a region of negative valence. The tension system, *t*<sup>a</sup>, (tension for avoidance) corresponds to the individual's

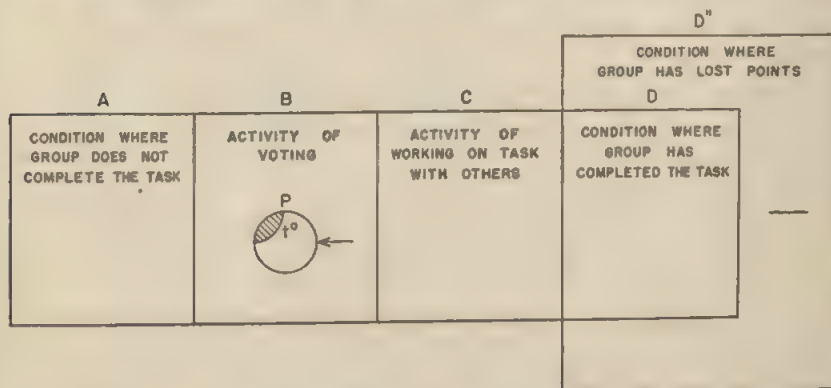


FIG. 25.1b. The psychological situation of the member in case of a "no" vote. desire to avoid completing the task. We hypothesize that tensions for avoidance are reduced where the person locomotes into a position which removes the possibility of his entering the region of negative valence. In the situation of the present experiment the direction of locomotion is

irreversible after the first step along the path, and  $t^*$  should be reduced upon  $P$ 's entering region  $A$ , "condition where the group does not complete the task."

The concept of a state region has been used in these representations to deal with the fact that if a group attains its goal, or in any other way changes its position within its social space, this event will produce a change in the member's position within his own space. Even though the member has been passive, and has taken no active part in the group's reaching its goal, he will have been "carried" by the group action into a new condition or state. State regions are distinguished from activity regions in that locomotion into or through the former depends, at least in part, on the person's being transported by some outside agent. In all other respects we assume that they have the same properties as activity regions.

### *Tension Systems for Group Goals and Avoidances*

An individual may disagree with the group's decision to complete or to avoid a given task. For simplicity, however, we make the working assumption—which will be evaluated below—that following the announcement of the group decision members will tend to agree with the group about the desirability or undesirability of completing the task.

On this assumption, if the group sets a goal of task-completion, the corresponding state region of the member will tend to have a positive valence. The member will thus have a tension system for completion which (a) will be reduced if the member is transported into the state region "condition where the group has completed the task" (experimental treatment Y-C); or (b) will remain in a state of tension if the member is not transported into this desired state region (treatment Y-I).

If the announced group decision is "no," we assume that in the subject's life space the region, "condition where the group has completed the task," tends to have a negative valence, and that the member has an avoidance tension system which (a) will be reduced if the member is transported into the state region, "condition where the group has not completed the task," and there is no longer any possibility of the individual's being transported into the region of negative valence (treatment N), or (b) will remain in a state of tension if the member remains in a position from which it is possible that he will be transported into the region of negative valence (which might result if the group were told that they would return to tasks on which they had voted "no").<sup>2</sup>

These hypotheses assert that tensions are reduced for tasks in the Y-C

<sup>2</sup>No direct test was attempted for the hypothesis that avoidance tensions would remain unreduced if the group were told they would return to N tasks. It was feared that if the group were made to act against its expressed decision to halt work, the



and  $N$  treatments and that tensions are not reduced in the  $Y-I$  treatment. Assuming that the level of recall of tasks within a treatment is directly related to tension level, there follows:

Hypothesis 1. % recall  $Y-I >$  % recall  $Y-C =$  % recall  $N$ .

Table 25.1 gives the data on recall of tasks for the three treatments,

TABLE 25.1

PERCENTAGE OF TASKS RECALLED UNDER THREE DIFFERENT EXPERIMENTAL TREATMENTS

ROTATION	TREATMENT								
	$Y-C$			$Y-I$			$N$		
	Total Tasks	# Re-called	$Y$ (%)	Total Tasks	# Re-called	$Y$ (%)	Total Tasks	# Re-called	$Y$ (%)
1	75	35	.467	75	40	.533	75	31	.413
2	70	31	.443	70	35	.500	70	36	.514
3	75	33	.440	75	42	.560	75	35	.467
4	70	35	.500	70	41	.586	70	29	.414
5	75	32	.427	75	42	.560	75	38	.507
6	75	29	.387	65	40	.615	70	31	.443
Mean			.444			.559			.460

$Y-I$ ,  $Y-C$ , and  $N$ . The mean percentages of tasks recalled by the subjects in each of the six rotations are .559 for treatment  $Y-I$ , .444 for treatment  $Y-C$ , and .460 for treatment  $N$ . By analysis of variance into three components, the influence of treatments on strength of recall is found to be highly significant ( $P < .01$ ). By  $t$ -tests we find that the mean recall score for  $Y-I$  tasks is significantly greater than either the mean recall scores for  $Y-C$  tasks ( $P < .01$ ) or for  $N$  tasks ( $P < .01$ ). On the other hand, there is no statistically significant difference between the mean recall scores for  $Y-C$  and  $N$  tasks ( $P = .59$ ). These results confirm the hypothesized relationships expressed in Hypothesis 1, above.

### *Effects of the Interaction of Individual and Group Decisions on Tension Systems for Group Goals*

We made the working assumption above that members will tend to agree with the announced group decision. It is to be expected in some instances at least that members whose votes were opposed to announced

members would become skeptical of the genuineness of their power to make decisions. However, we show below that avoidance tensions remain unreduced where individuals desire to avoid a task but are moved toward task completion by the action of the group.

results of the group voting would adhere to their original points of view.

Where a member's original vote is "yes," we designate this vote in combination with each of the three experimental treatments as  $y$   $Y$ - $C$ ,  $y$   $Y$ - $I$ , and  $y$   $N$ , respectively. Individual and group decisions are in agreement for the situations  $y$   $Y$ - $C$  and  $y$   $Y$ - $I$ , and we should expect as above that completion of the task will reduce tension systems for  $y$   $Y$ - $C$  tasks, and that interruption of the task will leave the tension unreduced for  $y$   $Y$ - $I$  tasks. In situation  $y$   $N$ , individual and group votes are in disagreement. If the person persists in holding to his own "yes" vote, his tension system for completion will remain unreduced where the group votes "no" and halts work. If, however, the individual "changes his mind," and accepts the judgment expressed by the group, then the avoidance tension which is aroused should be reduced by the group's halting work. On the assumption that sometimes individuals will change their minds and sometimes not, tensions will sometimes be reduced in the  $y$   $N$  situation and will sometimes remain unreduced. The level of recall of  $y$   $N$  tasks should, therefore, be somewhere between recall of  $y$   $Y$ - $I$  tasks (where tension is not reduced) and recall of  $y$   $Y$ - $C$  tasks (where tension is reduced). This may be formulated as:

**Hypothesis 2.**  $\% \text{ recall } y \text{ } Y\text{-}I > \% \text{ recall } y \text{ } N > \% \text{ recall } y \text{ } Y\text{-}C.$

The percentages of tasks recalled are .560 for  $y$   $Y$ - $I$  tasks, .477 for  $y$   $N$  tasks, and .412 for  $y$   $Y$ - $C$  tasks (Table 25.2), analysis of variance indicating that the influence of these situations upon recall is highly significant ( $P < .001$ ). Testing pairs of means by the  $t$ -test, it is found that recall of  $y$   $Y$ - $I$  tasks exceeds the recall of both  $y$   $N$  tasks ( $P < .01$ ) and  $y$   $Y$ - $C$  tasks ( $P < .001$ ). Recall of  $y$   $N$  tasks, moreover, is greater than recall of  $y$   $Y$ - $C$  tasks ( $P < .02$ ). The results confirm the relationships expressed in Hypothesis 2.

Turning now to the situation where the person's original vote is "no," the three possible situations are designated  $n$   $Y$ - $C$ ,  $n$   $Y$ - $I$ , and  $n$   $N$ . In situation  $n$   $N$ , individual and group decisions are in agreement, and the avoidance tension coordinated to a "no" vote should be reduced by the group's stopping work. In situation  $n$   $Y$ - $C$ , if the individual persists in his personal vote of "no," the avoidance tension will not be reduced; for the task is completed by the group, and the individual is transported into the region he desires to avoid. If, on the other hand, this member accepts the group vote of "yes," the resulting tension system for completion will be reduced upon the group's completing the task. Since, however, tension should not be reduced where the person rejects the group decision, the recall of tasks in situation  $n$   $Y$ - $C$  should be greater than recall of tasks in situation  $n$   $N$ . In situation  $n$   $Y$ - $I$ , it is to be expected that tension systems will remain unreduced whether the person accepts or rejects the group vote. If the person adheres to his "no" vote, his avoid-

TABLE 25.2

PERCENTAGES OF TASKS RECALLED UNDER SITUATION  $y$   $Y$ - $I$ ,  $y$   $N$ , AND  $y$   $Y$ - $C$ , BASED ON POOLED DATA FOR ALL INDIVIDUALS WITHIN EACH OF SIX ROTATIONS

ROTATIONS	TREATMENTS								
	$y$ $Y$ - $I$			$y$ $N$			$y$ $Y$ - $C$		
	Total Tasks	# Re-called	$X$ (%)	Total Tasks	# Re-called	$X$ (%)	Total Tasks	# Re-called	$X$ (%)
1	53	27	.509	43	22	.512	48	18	.375
2	53	28	.528	44	21	.477	56	25	.446
3	55	32	.582	55	29	.527	54	22	.407
4	48	27	.562	48	19	.396	55	25	.454
5	63	36	.571	52	26	.500	54	23	.426
6	51	31	.608	56	25	.446	58	21	.362
Mean			.560			.476			.412

ance tension will not be reduced, because treatment  $Y$ - $I$  implies that it is still possible that the group will complete the task, transporting him into the region of negative valence. If the person accepts the group vote of "yes," interruption on the task prevents reduction of the tension for completion. With tensions remaining unreduced in both cases, recall of  $n$   $Y$ - $I$  tasks should exceed recall in either of the other two situations. This may be expressed as:

Hypothesis 3. % recall  $n$   $Y$ - $I$  > % recall  $n$   $Y$ - $C$  > % recall  $n$   $N$ .

Percentages of recall are .547 for  $n$   $Y$ - $I$  tasks, .525 for  $n$   $Y$ - $C$  tasks, and .427 for  $n$   $N$  tasks (Table 25.3). The results are in the predicted rank order,

TABLE 25.3

PERCENTAGES OF TASKS RECALLED UNDER SITUATIONS  $n$   $Y$ - $I$ ,  $n$   $Y$ - $C$ , AND  $n$   $N$ , BASED ON POOLED DATA FOR ALL INDIVIDUALS WITHIN EACH OF SIX ROTATIONS

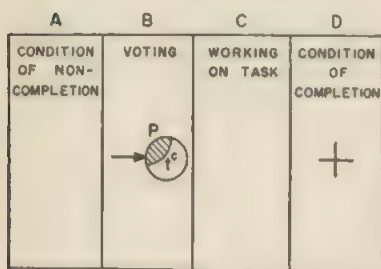
ROTATIONS	TREATMENTS								
	$n$ $Y$ - $I$			$n$ $Y$ - $C$			$n$ $N$		
	Total Tasks	# Re-called	$X$ (%)	Total Tasks	# Re-called	$X$ (%)	Total Tasks	# Re-called	$X$ (%)
1	22	13	.591	27	17	.630	52	9	.281
2	17	7	.412	14	6	.428	26	15	.577
3	20	10	.500	21	11	.524	20	6	.300
4	22	14	.636	15	10	.667	22	10	.454
5	12	6	.500	21	9	.428	23	12	.522
6	14	9	.643	17	8	.470	14	6	.428
Mean			.547			.524			.427

although analysis of variance applied to these data does not permit us to reject the null hypothesis ( $P = .20$ ). The data give partial confirmation of the relationships involved in Hypothesis 3, but the recall of  $n$   $Y-C$  tasks is unexpectedly high, approaching within two percentage points the level of recall for  $n$   $Y-I$  tasks.

We shall present here an interpretation of the relatively high level of recall of  $n$   $Y-C$  tasks, which it will be possible to test by additional data in the experiment. Both  $n$   $Y-C$  and  $y$   $N$  tasks, as we have noted, are characterized by disagreement between personal and group decisions. In both, our theory requires that tensions should be reduced if the person accepts the group vote which disagrees with his own; and, in both, tensions should not be reduced if the person rejects the group vote.

An analysis of situation  $y$   $N$  is presented in Figure 25.2a. At Time 1, when the person casts his original vote, a tension system for task-comple-

TIME 1. AT TIME OF MEMBER'S VOTE



TIME 2. AFTER GROUP'S LOCOMOTION

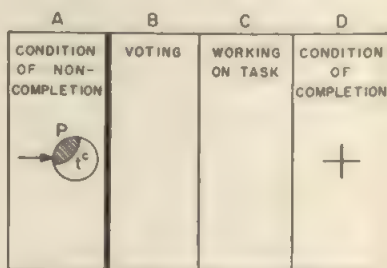


FIG. 25.2a. The psychological situation of the member who votes "yes" and rejects the group vote of "no" (situation  $y$   $N$ ). Representation is based on Fig. 25.1a; region  $D'$  is omitted for economy of presentation.

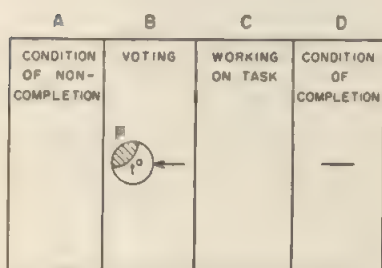
tion exists, and a force is acting on the person in the direction of the positively valent region, "condition where the group has completed the task." At Time 2, the group has voted "no" and has halted work. This is conceptually equivalent to introducing an impassable barrier in the individual's life space, which blocks locomotion toward this goal. The significant feature of this situation for our purposes is that the person has not been moved closer to the goal as a result of the group action. There should, therefore, be no increase of the force acting on him by virtue of the goal-gradient effect (17). Indeed, we may regard the person as having been moved by the group to a greater psychological distance from the goal, in which case the force toward the goal will be decreased.

In situation  $n$   $Y-C$  there is a marked difference. Here the person wishes to avoid completing the task, but he is not merely blocked by the group action; he is coerced into working on the task "against his will." The



conceptual analysis is presented in Figure 25.2b. At Time 1, when the member casts his original "no" vote, there is a tension-system for task-avoidance. A force is acting on the person in the direction away from the region "condition where the group has completed the task," which is now represented as having a negative valence. The effect of the group's completing the task at Time 2 is to transport the person into this region of avoidance, after which he is blocked from leaving it by an impassable barrier (since in the present experiment the completed task cannot be undone). The feature of the situation we wish to stress here is that the person has been moved closer to—in fact, inside—the region of avoidance.

TIME 1. AT TIME OF MEMBER'S VOTE



TIME 2. AFTER GROUP'S LOCOMOTION

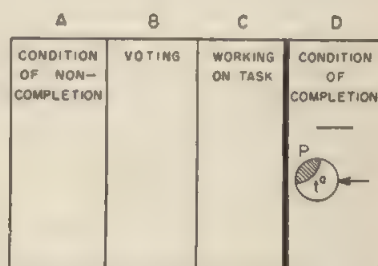


FIG. 25.2b. The psychological situation of the member who votes "no" and rejects the group vote of "yes" (situation *n Y-C*). Representation is based on Fig. 25.1b; region *D'* is omitted for economy of presentation.

By the goal-gradient hypothesis, the magnitude of an avoidant force increases steeply as the person approaches a region of avoidance. In consequence, the force *away* from region *D* should be greater in situation *n Y-C* (Fig. 25.2b) than the force *toward* region *D* in situation *y N* (Fig. 25.2a).

Lewin (11) presents evidence that where the person is in an "equilibrium" situation, i.e., an impassable barrier, there will be a rise in tension level. The amount of this rise is hypothesized to be directly related to the magnitude of the force acting on the person to locomote against the barrier. It follows that, if an individual rejects a group decision which conflicts with his own decision, there will be a greater rise in tension where the individual has voted "no" (situation *n Y-C*) than where the individual has voted "yes" (situation *y N*). Such a rise in tension would account for the relatively high level of recall in situation *n Y-C*.

### *Attitudes toward Disagreement between Individual and Group Decisions*

After the recall phase of the experiment, open-ended questionnaires were administered to determine whether different subjects had perceived

the experimental situation in similar ways. Considerable uniformity appeared among responses to questions dealing with such matters as feelings of success or failure, views about the reasons for interruption of tasks, and desire to do well on the test. A variety of responses were given, however, to the questions, "In general, how did you feel when you voted 'no' and the group voted 'yes'?" and "In general, how did you feel when you voted 'yes' and the group voted 'no'?"

Some indicated that they consistently accepted or rejected group decisions different from their own. Others responded differentially according to whether the contrary group decision was "no" or "yes." Thus some individuals, who tended to stress the value of being cautious, indicated that they resolved disagreements between their own and the group's votes by adopting a "no" position. Individuals who stressed the value of being venturesome resolved disagreements by adopting a "yes" position. The result was that some individuals whose votes differed from the group's accepted group votes of "no" and rejected group votes of "yes," while some accepted group votes of "yes" and rejected group votes of "no."

The attitudes expressed toward group decisions which differed from their own were coded under four categories:

1. *Accept group decision.* Subject explicitly adopts the contrary group decision, disavowing his own, e.g., "The group knew best; I reconsidered and thought I was wrong; I guess I really wanted to do it anyway."

2. *Acquiesce in group decision.* Subject does not explicitly adopt the group decision, but explicitly states his willingness to comply with the group action, e.g., "I tried my best even though my vote was different; it was O.K. with me if that's the way they wanted it."

3. *Reject group decision.* Subject does not state his willingness to comply with the group decision, and discusses (a) his having disagreed with the group, or (b) his continuing to disagree with the group.

4. *Fear group decision.* Subject indicates "anxiety" about complying with the group decision, e.g., "I felt I was a liability to the group; I didn't know how to contribute to the puzzle, and felt I had to try especially hard."

We assume that persons who *accept* a group decision which differs from their own change the valence, whether positive or negative, which they have originally attributed to completing the task. Persons who *acquiesce*, *reject*, or *fear* the contrary group decision are assumed to maintain the original valence of the task. Let us examine in more detail how each of these attitudes may be expected to influence tension systems in each type of experimental situation.

*Situation γ N.* The member votes "yes," the group votes "no," and the work is halted. Thus, it follows:

1. If the person *accepts* the group decision, he develops a tension system for avoidance. The outcome—quitting work on the puzzle—**reduces this tension system.**

2. If the person *acquiesces* in the group decision, he maintains his original tension system for completion. Quitting work constitutes an impassable barrier to this goal, and this equilibrium condition should **produce some rise in tension level.**

3. If the person *rejects* the group decision his original tension system is maintained. This system is initially stronger than in the case of acquiescence. Like acquiescent persons, the rejective individual is in a condition of equilibrium, but since task-completion has a greater positive valence for the rejective person, the positive driving force acting upon him against the impassable barrier is greater. Rejection should, therefore, produce a greater rise in tension than acquiescence. Both because of the greater original tension level and the greater expected rise in tension, persons who reject the group decision should have stronger tension systems than those who acquiesce.<sup>3</sup>

Transforming level of tension into percentage of tasks recalled, we obtain:

**Hypothesis 4.** % recall  $y$   $N$  accept < % recall  $y$   $N$  acquiesce < % recall  $y$   $N$  reject.

The data of Table 25.4 confirm the predicted rank order. The mean percentages of tasks recalled are .292 for acceptant individuals, .424 for acquiescent individuals, and .574 for rejective individuals. Independently of the predicted rank order, the null hypothesis applied to these means, tested by an analysis of variance weighted for unequal size of groups, can be rejected at the .05 level of confidence.

*Situation n Y-C.* The person votes "no," the group votes "yes," and the task is completed. Thus, it follows:

1. If the person *accepts* the group decision, he develops a tension system coordinated to the group's completing the task. The outcome, completing the task, reduces this tension system.

2. If the person *acquiesces* in the group decision, he maintains his original tension system for avoidance. Completion by the group introduces an impassable barrier which blocks avoidant locomotion. A rise in level of tension should follow.

3. If the person *rejects* the group decision, the initial avoidance tension is assumed to be greater than in acquiescence. Again action by the group introduces an impassable barrier. The rise in tension should be greater here than in acquiescence, since the negative driving force away from completion is assumed to be greater.

<sup>3</sup>The attitude of *fear* cannot occur in situation  $y$   $N$ , since where the group halts work the person is not required to do anything with respect to which he feels inadequate.

4. If the person *fears* the group decision, the avoidance tension is assumed to be greatest. The negative driving force against the impassable barrier is likewise assumed to be greatest. Accordingly, the level of tension should be at a maximum.

TABLE 25.4

MEAN PER CENT RECALL OF TASKS IN THREE DIFFERENT SITUATIONS OF DISAGREEMENT FOR FOUR ATTITUDES TOWARD DISAGREEMENT

SITUATION		ATTITUDE TOWARD GROUP VOTE *			
		Accept	Acquiesce	Reject	Fearful
<i>y N</i>	Mean % recall for individuals	.292	.424	.574	
	Number of individuals	6	36	25	
<i>n Y-C</i>	Mean % recall	.167	.597	.660	.900
	Number of individuals †	10	32	12	5
<i>n Y-I</i>	Mean % recall	.467	.577	.667	.500
	Number of individuals	10	25	11	8

\* Note that an individual's attitude toward a group vote of *N* may be independent of his attitude toward a group vote of *Y*, and conversely. A person, for example, may accept group *N* votes and reject group *Y* votes (see text).

† The corresponding scores for *n Y-C* and *n Y-I* are each based on the same class of subjects, namely, those with the specified attitudes toward group *Y* votes. Frequently, however, individuals were exposed to one or more *n Y-C* tasks and not to *n Y-I* tasks, and vice versa—hence the different frequencies of individuals in the same attitude column.

Measuring tension level by recall, we have:

**Hypothesis 5.** % recall *n Y-C* accept < % recall *n Y-C* acquiesce < % recall *n Y-C* reject < % recall *n Y-C* fear.

The predicted rank order is confirmed in Table 25.4, the mean percentages of recall corresponding to the terms of Hypothesis 5 being .167, .597, .661, .900, respectively. The differences among these means are significant at a high level of confidence ( $P < .01$ ).

**Situation *n Y-I*.** The person votes "no," the group votes "yes," and the task is interrupted. Thus, it follows:

1. If the person *accepts* the group decision, he develops a tension system coordinated to the group's completing the task. Since the task is interrupted, this tension system remains unreduced. However, the tension level for these acceptant individuals is assumed to be relatively low.

2. If the person *acquiesces* in the group decision, he maintains his original tension system for avoiding work, which is at a higher level than



the tension associated with acceptance. Moreover, the group action prior to the interruption transports the person closer to the region of negative valence, and the person is blocked from quitting the task, since he has been told that work will be resumed. Again, this condition of equilibrium should produce a rise in level of tension.

3. If the person *rejects* the group decision, the level of tension should be greater than in acquiescence (for the same reasons given in the discussion of *n Y-C reject*).

4. If the person *fears* the group decision, the level of tension should be greatest (for the same reasons given for *n Y-C fear*).

From these considerations we may propose:

**Hypothesis 6.** % recall *n Y-I accept* < % recall *n Y-I acquiesce* < % recall *n Y-I reject* < % recall *n Y-I fear*.

The rank order of the first three terms in Hypothesis 6 is predicted correctly (Table 25.4). However, the level of recall for *n Y-I fear* is lower than predicted. A possible explanation for this discrepancy may be suggested in terms of the partial reduction of avoidance tensions corresponding to feelings of relief in fearful persons that appear to occur when completion of the task is postponed.

### *Frequency of Individual and Group Disagreement*

Up to this point, we have examined a number of the ways by which motivational processes in the individual can be affected by group goal-setting and locomotion. The focus of treatment throughout has been in terms of goals or avoidances which members hold in relation to the group's completing or not completing a task.

In addition, it seems likely that group members would have another goal in this situation, namely, voting in such a way that they would be generally in agreement with their fellow members. The studies by Festinger, *et al.*, (4) indicate that groups induce pressures on members to conform to standards and ways of behaving which are relevant to group functioning, and that deviants from these standards tend to be rejected by the group. Sherif's (20) work suggests that, particularly where the grounds for individual judgment are vague or ambiguous, individuals will want their judgments to be reinforced by "social reality."

The judgments which members were obliged to make in this situation were both relevant to the group's functioning and based on relatively vague criteria. We would therefore expect that concurrently with goals related to the task, members would want their own decisions to be in more or less general agreement with the group decisions. Members could tell on the basis of the announced group vote whether or not they were agreeing with the group. If the member found himself agreeing often

enough, i.e., if the goal of being in agreement were reached, tension systems coordinated to this goal should be reduced. With "agreement" tensions reduced, one would expect no effects of these tension systems on "task" tensions. If the member finds himself in frequent disagreement with the group, however, the tension system corresponding to a desire for agreement should not be reduced. How does this affect tension systems for the group task?

Each subject voted 15 separate times, and found in the course of the experiment that group votes differed from his own votes with greater or lesser frequency. Subjects were exposed to the announcement of five group "no" votes and 10 group "yes" votes. One would expect that persons who more frequently voted "no" would more frequently find themselves in opposition to the group. Paradoxically, however, a large number of disagreements with the group vote could arise because of the person's desire to agree with the group. If, for example, the announced group vote was "no" on a given puzzle, and the subject then voted "no" on the next puzzle, anticipating that the group would repeat its vote, the subject's own vote would necessarily be in disagreement, since the subsequent announcement was always "yes." We were, in fact, able to find no clear-cut relationship between a person's tendency to vote "yes" or "no" and the frequency with which group votes differed from his own votes. We can conclude that in general subjects had little control over the frequency of their disagreements.

As the number of their disagreements with the group became greater, however, several subjects could be observed to be losing their interest in the group tasks. They appeared, instead, to become concerned with whether the group votes were turning out the same as their own. After casting their votes, they would appear to await the announcement of the group vote with great expectancy. If the group vote agreed with their own, they would give evidences of feelings of satisfaction; if it turned out differently, they would show disappointment. In the postexperimental questionnaire, subjects who felt the group vote had differed from their own too frequently expressed a variety of doubts and misgivings about themselves, asking such questions as—"What's wrong with me? Am I a bad group member? Am I too different from the others?"

Most subjects found the announced group vote differed from their own votes from five to eight times over the 15 tasks. In examining the recall of tasks in relation to the number of such disagreements, it was noticed that with very frequent disagreements (*a*) recall appeared to diminish in certain cases where theoretically we would expect the presence of unreduced tension systems; (*b*) recall appeared to increase for tasks on which his own and group vote were in agreement. Such results seemed to have a *prima-facie* reasonableness in terms of the

qualitative observations reported above. For, if frequent disagreements with the group vote created a situation where members lost their task-orientation, then there should be no arousal of tension systems for the tasks. If the member in this situation now desired to be in agreement with the group, agreements would be experienced as rewards, and it might be expected that rewarded tasks will tend to be better remembered (3).

In order to determine whether effects of this sort were present in the data, tasks were grouped in Table 25.5 according to whether they had

TABLE 25.5

COMPARISON OF PERCENTAGES OF RECALL OF AGREEMENTS VERSUS DISAGREEMENTS IN TREATMENTS *I-C*, *I-I*, AND *N*, BASED ON POOLED DATA FOR GROUPS OF INDIVIDUALS WITH DIFFERENT NUMBERS OF TOTAL DISAGREEMENTS

Comparison	Total Number of Disagreements			
	5	6	7	8
( $\%_{en} I-C$ ) ( $\%_{ey} I-C$ ) Difference (%)	(44.7-38.0) +6.7	(57.2-37.5) +19.7	(67.0-48.9) +18.1	(44.4-55.9) -11.5
( $\%_{en} I-I$ ) ( $\%_{ey} I-I$ ) Difference (%)	(57.9-56.2) +1.7	(60.0-55.8) +4.2	(59.3-52.0) +7.3	(41.6-57.2) -15.6
( $\%_{en} N$ ) ( $\%_{ey} N$ ) Difference (%)	(44.6-46.8) -2.2	(49.0-46.6) +2.4	(44.5-36.4) +8.1	(55.0-66.7) -13.7
( $\%_C$ Total Disagr.)- ( $\%_A$ Total Agr.) Total Difference (%)	(49.1-47.0) +2.1	(55.4-46.6) +8.8	(56.9-45.8) +11.1	(46.3-59.9) -13.6

been worked on by individuals whose own votes had differed from the group vote five, six, seven, or eight times. For each of the three group treatments comparisons were then made of the percentages of tasks recalled where the individual's vote on the task had been the same as the group's and where the individual's vote had been different. The scores presented in Table 25.5 are the differences between these percentages. Friedman's (6) test is applied to these data because of heterogeneity of variance and indicates that frequency of disagreements significantly affects type of recall ( $P < .02$ ). Where subjects differ from the group five, six, or seven times, disagreements are either about equally recalled or somewhat more frequently recalled than agreements. But where subjects differ on eight occasions, i.e., on over half the total votes cast, a sharp reversal occurs and the recall of agreements exceeds that of disagreements.

It seems plausible to interpret this phenomenon as reflecting a loss of task-orientation by subjects and the replacement of this with a new goal, namely, the goal of finding themselves in the condition of being

in agreement with the group. However, to say that this goal of being in agreement with the group will lead subjects to recall agreements raises a difficult problem in terms of tension system theory. Agreement for these subjects represents the attainment of their goal; disagreement represents non-attainment. We would then have to say that subjects with the goal of being in agreement recall more finished tasks (i.e., agreements) than unfinished ones (i.e., disagreements).

A brief statement may be in order about a possible way of resolving this paradox. Within Lewinian theory tension systems may result in a person's attempting to locomote toward a goal, or, if the medium is fluid or more "irreal," some form of restructuring of the situation may occur. On the level of action, interruption of the task leaves the person with tendencies to resume locomotion (18). The Zeigarnik effect, according to Lewin (12), is based on the fact that where thinking is related to action, the person tends to continue to think about the task which is to be resumed, and that this will be reflected in increased recall. However, thinking about unfinished tasks is not functionally related to tension-reduction if the person feels unable to act, but feels obliged to *wish* for a satisfactory outcome. For it is likely that persons operating on a wish-level will obtain a greater measure of tension-reduction by thinking about successes (finished tasks) rather than failures (unfinished tasks). This should manifest itself in tendencies to recall finished tasks by persons who feel unable actively to locomote to their goals—which is a possible interpretation of findings such as those of Rosenzweig's (19) with handicapped children.

In the present experiment, among those subjects who experienced frequent disagreements with the group, one would expect to find some, at least, who would be doubtful that action on their part could bring them into agreement. If, with frequent disagreements, they become discouraged about their ability to predict the group vote, they can only cast their votes and wait passively, *wishing* that the group vote will turn out the same as their own. The hypothesis that persons who are behaving on a wish-level will tend to recall finished tasks, will then account for the finding that these subjects recall more agreements than disagreements.

To test this interpretation of the results, one could design an experiment in which the only goal of the member is to vote in such a way that he will be in agreement with group vote. Recall of agreements and disagreements could then be compared in situations where the individual believes he can actively locomote toward this goal and where he believes he is unable actively to locomote. Theoretically, recall of agreements should exceed recall of disagreements in the latter case, disagreements should exceed agreements in the former case.<sup>4</sup>

<sup>4</sup> This experiment has since been performed with positive results (20).



### Summary

A method for conceptually treating the relations between individual and group goal-striving has been presented, and a technique for measuring individual motivation in relation to group goals has been described.

The conceptual treatment—within the framework of Lewin's topological and vector constructs—is designed to handle the fact that individuals may find themselves psychologically "carried" toward or away from goals, or toward or away from avoidances by the action of a group. The effects of the group action are represented in the individual's life space as locomotions by the person into or through state regions. Goals or avoidances which the individual holds for the *group* are represented as state regions with positive or negative valences, respectively.

The measurement technique employed is an adaptation of Zeigarnik's method of recall of interrupted tasks to the group situation. An experiment was designed in which a number of individuals worked together on a series of group tasks. Votes were taken on whether or not the individual desired the group to complete each task, and after these votes work on the tasks was either halted, partly completed, or fully completed. The major findings may be indicated as follows:

1. Tension systems can be aroused for goals which the individual holds for the group. If the individual accepts the group goal, tension is reduced where the group completes the task; tension is not reduced where the group activity is interrupted. Just as with tension systems for goals which the person holds for himself, these can be measured by the relative recall of finished versus unfinished group tasks.

2. Tension systems can be aroused for avoidances which the individual holds for the group. Avoidance tensions will be reduced if the possibility of the individual's being "carried" into the region of avoidance is removed; they will be unreduced if this possibility persists. It was shown that recall of tasks can be used to measure avoidance tensions as well as goal tensions.

3. A member's attitude toward disagreement between his own and group decisions will have systematic effects on the arousal and reduction of tension systems. The same person's attitudes toward group decisions which differ from his own may vary according to whether the group decision is to complete a task or to abandon it. Four attitudes affecting tension systems were distinguished, "acceptance," "acquiescence," "rejection," and "fearfulness," the latter arising only in cases where the group decision is to complete a task.

Where an individual votes "yes" (to complete a task), the consequence of a contrary group vote is that a barrier is interposed along the individual's path to the goal (frustration). Where the individual votes "no" (to

avoid a task), the consequence of disagreeing with the group is that the person will be "carried" by the group toward the avoidance (coercion). The theoretical derivations that individuals will develop higher levels of tension in situations of coercion than in situations of frustration were confirmed.

4. Evidence was found for the interpretation that tension systems to be in agreement with other members exist concurrently with tension systems for the group task, and that frequent deviations from the group vote will leave tension for agreement unreduced. This *agreement* tension system tends to supplant *task* tension systems in deviant members.

### REFERENCES

1. Adler, D. L., & Kounin, J. S. Some factors operating at the moment of resumption of interrupted tasks. *Journal of Psychology*, 1939, 7, 255-267.
2. Barnard, C. I. *The functions of the executive*. Cambridge: Harvard Univ. Press, 1938.
3. Beebe-Center, J. C. *The psychology of pleasantness and unpleasantness*. New York: D. Van Nostrand, 1932.
4. Festinger, L., et al. *Theory and experiment in social communication*. Ann Arbor, Mich.: Univ. of Michigan, 1950.
5. French, J. R. P., Jr. Group productivity. In H. Guetzkow (Ed.), *Groups, leadership, and men*. Pittsburgh: Carnegie Press, 1951.
6. Friedman, M. Use of ranks to avoid the assumption of normality implicit in the analysis of variance. *Journal of the American Statistical Association*, 1937, 32, 675-701.
7. Homans, G. C. *The human group*. New York: Harcourt, Brace, 1950.
8. Horwitz, M., & Lee, F. J. Effects of decision making on motivational processes in group members. In press. (Abstract, *American Psychologist*, 1952, 7, 312-313.)
9. Katz, D. Morale and motivation in industry. In W. Dennis (Ed.), *Current trends in industrial psychology*. Pittsburgh: Univ. of Pittsburgh, 1949.
10. Leeper, R. *Lewin's topological and vector psychology*. Eugene: Univ. of Oregon, 1943.
11. Lewin, K. The conceptual representation and the measurement of psychological forces. *Contributions to psychological theory*, 1938, 1, No. 4.
12. Lewin, K. *Field theory in social science*. New York: Harper, 1951.
13. Lewin, K. *Principles of topological psychology*. New York: McGraw-Hill, 1936.
14. Lewis, Helen B. An experimental study of the role of the ego in work. I. The role of the ego in cooperative work. *Journal of Experimental Psychology*, 1944, 34, 113-127.
15. Lewis, Helen B., & Franklin, Muriel. An experimental study of the role of the ego in work. II. The significance of task orientation in work. *Journal of Experimental Psychology*, 1944, 34, 194-215.
16. Lippitt, R. An experimental study of authoritarian and democratic group atmospheres. *University of Iowa Studies in Child Welfare*, 1940, 16, No. 3, 43-195.

17. Miller, N. E. Experimental studies of conflict. In J. McV. Hunt (Ed.), *Personality and the behavior disorders*. New York: Ronald, 1944.
18. Ovsiankina, Maria. Die Wiederaufnahme unterbrochener Handlungen. *Psychologische Forschung*, 1928, **11**, 302-379.
19. Rosenzweig, S. The recall of finished and unfinished tasks as affected by the purpose with which they were performed. *Psychological Bulletin*, 1933, **30**, 698.
20. Sherif, M. *The psychology of social norms*. New York: Harper, 1936.
21. Sherif, M., & Cantril, H. *The psychology of ego-involvements*. New York: Wiley, 1947.
22. Zeigarnik, Bluma. Das Behalten erledigter Handlungen. *Psychologische Forschung*, 1927, **9**, 1-85.

## Phases in Group Problem Solving

Robert F. Bales and Fred L. Strodbeck

The idea that groups go through certain stages or phases in the process of solving problems, or that problem solving would somehow be more effective if some prescribed order were followed, has been current in the literature for some time (4, 5, 8). However, the distinction between predicting an empirical order of phases under given conditions and prescribing an ideal order in terms of value judgments has not in all cases been clearly drawn. Furthermore, it has not always been recognized that different types of conditions or problems may result empirically in different sorts of phase movement. The persistence of these confusions has probably been related to the fact that until recently empirical methods which would give operational substance to the ideas have been lacking.

This paper presents a method of testing for the empirical existence of differentiated phases in group process and some evidence that under certain particular conditions a certain type of phase movement does tend to appear. The type of phase movement described is *not* held to be universal in an empirical sense. Whether it appears empirically depends upon a large number of conditions. Whether this type of phase movement is "optimum" under certain conditions in terms of value standards is a different problem and is not discussed in this paper.

By *phases* in the hypothesis presented below, we mean qualitatively different subperiods within a total continuous period of interaction in which a group proceeds from initiation to completion of a problem involving group decision.

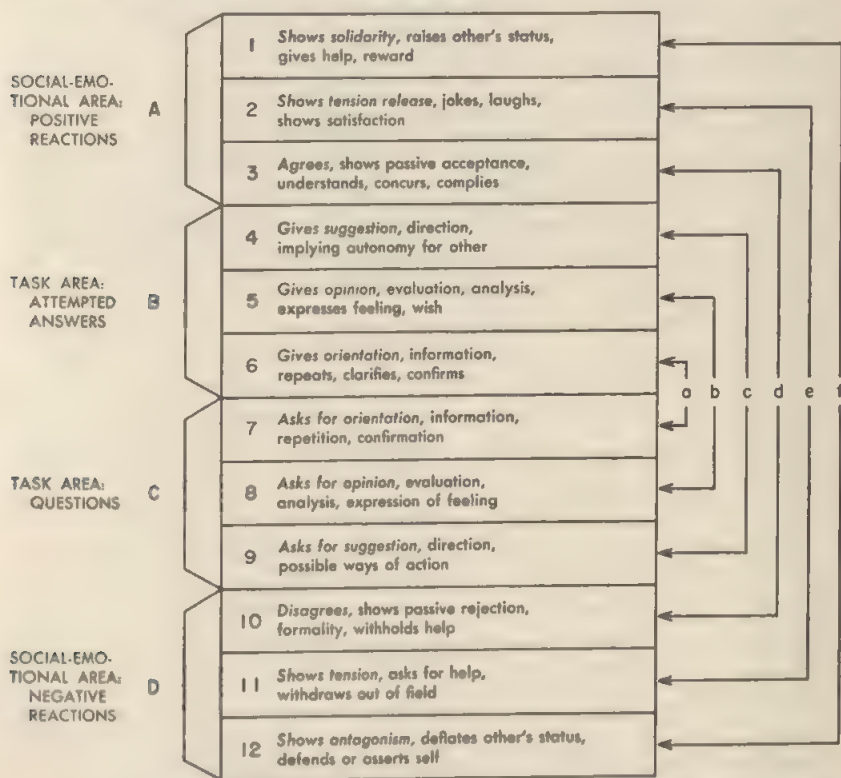
### A Phase Hypothesis for Full-fledged Problems

The present phase hypothesis is restricted to instances in which groups work toward the goal of a group decision on a full-fledged problem

From *The Journal of Abnormal and Social Psychology*, 1951, 46, 185-195. The research was facilitated by the Laboratory of Social Relations, Harvard University. The article, in somewhat condensed form, is reprinted by permission of the authors and the American Psychological Association.



Briefly stated, the phase hypothesis is the proposition that under these conditions groups tend to move in their interaction from a relative emphasis upon problems of *orientation*, to problems of *evaluation*, and subsequently to problems of *control*, and that concurrent with these transitions, the relative frequencies of both *negative reactions* and *positive reactions* tend to increase. The terms used in the statement of the hypothesis have as their operational referents the acts which are briefly defined in Figure 26.1. There are 12 categories on the observation list.



Key: *a*, problems of orientation, *b*, problems of evaluation, *c*, problems of control, *d*, problems of decision, *e*, problems of tension-management, and *f*, problems of integration.

FIG. 26.1. Interaction process categories defined and grouped by types.

The present hypothesis is stated in terms of five groups of these categories, identified by the brackets on the left and right of the list. Categories 6 and 7 are grouped as dealing with problems of orientation; 5 and 8 deal with problems of evaluation; 1 and 9, with problems of control; 10, 11, and 12, with negative reactions; and 1, 2, and 3, with positive reactions.

This is a relatively crude grouping, and it seems likely that further experience will enable us to state the hypothesis in a way which treats each category separately.

This particular phase hypothesis is expected to hold only under *certain conditions*, which we try to identify and state below. In general, we believe that the rates of activity we observe in each of the categories, and the way these rates move, over time, vary with changes in the conditions under which the interaction takes place. A major distinction can be drawn between those conditions which may be regarded as constituted prior to the period of observation, and those which arise and change during the actual period of observation.

Under prior conditions we tend to think of three broad classes of variables: (a) the personalities of the individual members in their idiosyncratic aspects; (b) those characteristics the members have in common, as a part of their parent culture, as well as of the subculture of the particular group under observation; and (c) the organization of the group, that is, the expectations the members have established concerning their social relationships with each other and their different positions in this total constellation of expectations.

In addition to these prior conditions, we recognize (d) a series of conditions arising from the nature of the problems faced during the specific period of observation, which change as the group interaction moves through time.

Obviously, we are not able to specify the content of these four classes of conditions with the degree of refinement we should like, but as a first approximation we sketch the following requirements as the conditions under which the present phase hypothesis is expected to hold. Whenever the group or the problem does not meet the requirements, the particular phase movement described above is not expected to appear.

We have no experimental evidence as to the effects of variations in personality composition of the group on phase movement. Our data are all obtained from groups of persons assumed to be "normal." There are more or less obvious reasons for supposing that the hypothesis should not be expected to apply to groups involving persons of subnormal intelligence or seriously disturbed personalities.

We assume the participants will be adult, or near adult, members of our own culture. This gives us some expectation that they will speak English, have some formal education, etc. As to the particular subculture of the groups, if the group has met before, it seems possible that such features as special procedural customs and training in group discussion methods might directly affect the phase movement. Hence, it may be that certain groups could deliberately evolve procedures to circumvent the expected movement, or to follow it in spite of conditions which would

otherwise prevent it. Obviously, it is necessary to exclude cases of this type.

We require a group in which there is some minimum pressure to maintain its solidarity so that joint decision will have some binding power over the members after the sequence observed, and so that the presence of disagreement, tension, and antagonism will be negatively valued. The status differences among members of the group should not be so great as to deny each member the right to participate and influence the choice of the ultimate decision. It appears likely that serious status struggles within the group may modify the phase movement, although this has not yet been explored. The group size may vary from two to twenty, or may be even larger, perhaps, if there is the possibility of face-to-face interaction among the participants over a common problem.

As to the duration of the period of observation itself, we require the selection for analysis of a single complete "topical cycle of operations," from the recognition of a topical problem to its disposition by the group. We do not mean this requirement to exclude periods in which a group considers several topics involved in a single major decision, but we do require that, when topical problems are considered serially as items on an agenda, the period of discussion on each topic be analyzed separately. Thus, an entire meeting in some cases may be an appropriate period for analysis; in other cases, discussion of a single agenda item may be appropriate. (In addition, we exclude groups not concerned with a fairly specific problem of group planning and decision. For example, we exclude groups in which the aim or main emphasis is on expressive personal interaction, such as therapeutic interviews, play groups, meetings of friends at a cocktail party, and the like.)

Finally, we require a task in which it may be assumed that the functional problems of *orientation*, *evaluation*, and *control* are each to a major degree unsolved at the beginning of observation and are solved in some degree during the period of observation. More specifically—

With regard to *orientation*, members of the group must have some degree of ignorance and uncertainty about the relevant facts, but individually possess facts relevant to decision. A clear example of a group which meets this requirement is a diagnostic council, where the members have seen the patient separately and have made different tests relevant to a decision as to what to do with the patient.

With regard to problems of *evaluation*, we require that the problem not be what is sometimes called an "open and shut" case. We need to be able to assume that the members possess somewhat different values or interests and that the problem is such that it involves several different values and interests as criteria by which the facts of the situation and the proposed course of action are to be judged.

With regard to problems of *control* (of the members over one another and over the common environment), we require that there be both pressure for a group decision and the expectation of further joint action. It is also assumed that there are a number of possible alternatives with different, and perhaps uncertain, degrees of potential frustration or satisfaction associated with various choices.

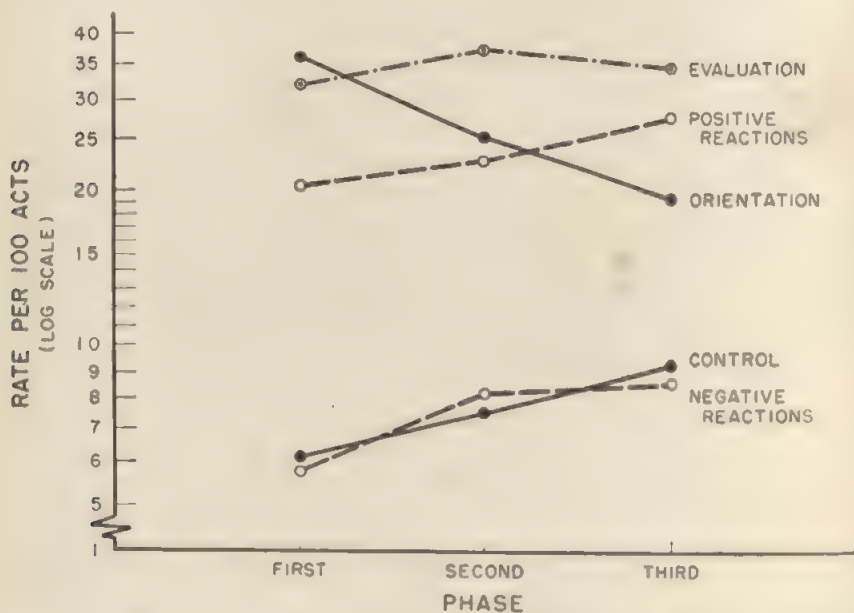


FIG. 26.2. Relative frequency of acts by type and phase, based upon 22 sessions.

When problems lack or greatly minimize any of these three characteristics, we speak of them as being *truncated*. When the three characteristics are present, we speak of the problem as being *full-fledged*. We do not expect the particular phase hypothesis stated above to hold for truncated problems. Presumably, it may be possible to formulate other phase hypotheses which will describe the phase movement for particular kinds of truncated problems.

The above conditions may seem formidable at first glance, but it is our opinion that they are met in group conferences, committees, and the like with sufficient frequency to insure the practical importance of investigating situations of this type.

In order to test the hypothesis empirically, it is necessary to specify the length of a phase. In the absence of any compelling rationale, we have adopted a simple convention. After the observations have been recorded on a moving tape (1), we divide into thirds the cycle of operations which



constitutes the total period to be analyzed, producing the *first*, *middle*, and *final* phases. The total period is divided so that each phase includes one-third of the acts of the total set. (This is approximately equivalent to a time division into thirds, though not quite, since we have observed that there is some tendency for the interaction to speed up toward the latter part of topical cycles.) Since we have no basis for predicting the absolute number of acts by type for each phase, we implement the hypothesis by designating the phase in which we expect the number of acts of a particular type to be high, intermediate, or low when rank-ordered.

We have drawn Figure 26.2 on the basis of the summary data for all group sessions examined in the present study in order to illustrate something of the magnitude of the variation which may be expected. It should be emphasized that, when we say there is a shift in relative emphasis from problems of orientation in the first phase, to problems of evaluation in the second phase, to problems of control in the third phase, we do not mean that the absolute magnitude for the selected activity is greater than all others in that phase—we mean, rather, that the rate of the selected activity is at its own high point in the designated phase. (It should be noted that the cases upon which Figure 26.2 is based include a number in which the conditions for the hypothesis are not fully met, and yet the phase movement of the aggregate is of the type we specify will hold for individual cases only under full-fledged conditions. This apparent paradox will be discussed later.)

### Rationale for the Hypothesis

For an interacting group, the solution of problems of orientation is assumed to bear an enabling relation to the solution of problems of evaluation and control and, in this sense, to be functionally prerequisite to their solution. That is, an individual may be cognitively oriented to a situation and speak of it to others in cognitive terms without committing himself overtly either to evaluation of it, or an attempt to control it; but speaking to the other in evaluative terms implies previous orientation, and the attempt to control the situation by joint action implies both previous orientation and evaluation. Something like this sequence of process may be characteristic of individual human problem solving on the nonovert level. Historically speaking, most of the theories about steps or stages in group problem solving seem to be more or less direct extrapolations of steps or stages assumed to exist in individual mental processes. The present rationale is based directly on conditions present in the overt process of social interaction between individuals through an appreciable lapse of time, and it may be compatible with any number of theories regarding the mental processes of individual problem solving.

In the most general rationale of the whole set of categories (see Fig. 26.1), 3 and 10 are thought of as dealing with problems of *decision*; 2 and 11, with problems of *tension management*; and 1 and 12, with problems of *integration* or *reintegration* of the group. For the present phase hypothesis, these categories have been grouped, not according to the type of functional problem with which they deal, but according to their implication, positive or negative, for the solution of these types of problems. These problems we call social-emotional problems, to distinguish them from those which are more directly task-connected (see Fig. 26.1, brackets on left).

It is our assumption that efforts to solve problems of orientation, evaluation, and control (that is, attempts to accomplish the task) tend to lead to differentiation of the roles of the participants, both as to the functions they perform and their gross amounts of participation. Both types of differentiation tend to carry status implications which may threaten or disturb the existing order or balance of status relations among members and thus impair the basic solidarity of the group.

This impairment, we assume, tends to grow more marked as the group passes from emphasis on problems of orientation to problems of evaluation, and still more acute as it passes on to its heaviest emphasis on problems of control. This assumption seems to be a more generalized way of stating the findings of certain other studies. For example, Lippitt (9) found negative reactions to autocratic control or leadership in boys clubs under certain conditions, and Rogers and his associates (10) tend to find a minimization of negative reactions on the part of clients when the counselor confines himself to nondirective (or, in our categories, orienting) types of activity. Thus, the present assumption may be regarded as a generalization of this connection between degree of control and negative reactions, and as applying to different points in the process of the same group, not simply to differences between groups.

Thus, as we conceive the process, a series of changes in the social-emotional relationships of the members tend to be set in motion by pressures arising initially from the demands of the external problem or outer situation. As they grow more acute, these social-emotional problems, as well as the task problems, tend to be expressed or dealt with in overt interaction. These, in brief, are the theoretical reasons for expecting that with our crude division of the cycle of operations into three phases, rates in Categories 10, 11, and 12 will be lowest in the initial period and highest in the final period, moving concomitantly with the emphasis on problems of control.

However, at the extreme end of the final period, assuming that the members' attempts at control over the outer situation and over each other are successful and a final decision is reached, we expect the rates in Cate-

gories 1, 2, and 3 also to rise to their peak. In other words, the group tends to confirm its agreement and to release in diffuse ways the tensions built up in its prior task-efforts, repairing the damage done to its state of consensus and social integration. We note joking and laughter so frequently at the ends of meetings that they might almost be taken as a signal that the group has completed what it considers to be a task effort, and is ready for disbandment or a new problem. This last-minute activity completes the hypothetical cycle of operations both for the task problems and social-emotional problems. The apparent incongruity of predicting a peak for both negative and positive reactions in the third phase is thus explained. Negative and positive reactions tend to be successive emphases within the crudely defined third phase.

### Testing the Phase Hypothesis

To test the phase hypothesis, we have considered *all* the protocols available in our files which had been scored in a form appropriate for this investigation. The number is small, only 22 cases. Some of these cases represent several hours of sustained interaction by one group, while others represent the discussion of single topics taken from longer sessions. The groups involved were originally observed for a number of different purposes. Some were experimentally formed groups with assigned tasks. Some were operating groups that allowed us to sit in and observe. We have given a brief description of the task considered by each of these groups in Table 26.1.

The writers have judged each of the 22 cases separately and have agreed that 8 of the 22 satisfactorily fulfill the conditions outlined in earlier paragraphs. The distinction between cases which meet and cases which fail to meet the conditions can be illustrated by discussion of a few concrete ones.

Cases 8, 10, 11, and 15 were chess problem solving groups in which the participants were well oriented to the factual aspects of the problem before beginning interaction. Chess problems are almost uniquely "full information" problems, and the participants were skilled chess players. The profile of scores generated in these sessions was uniformly below the expected limit on giving information and orientation, according to empirical norms we have published elsewhere (3). On this basis, the writers classified this problem as being *truncated*; it was assumed not to have the **necessary requirement for orientation**.

An interesting and partially parallel instance is Case 7. Here, again, a chess problem which the group solves cooperatively is involved, but the participants are novices who have just been instructed for one hour in the rules of the game. They have their instruction manuals with them and

TABLE 26.1

TRANSPPOSITIONS REQUIRED TO ESTABLISH THE ORDER PREDICTED BY THE PHASE  
HYPOTHESIS FOR 22 SETS OF OBSERVATIONS

Case No.	Fulfills Conditions	Description of Group and Task	No. of Transpositions Required
1	Yes	Five-man chess novice group planning first move of seven-move problem	0 *
2	Yes	Three-man group on first group projective story	1 *
3	Yes	Eight-man academic group planning thesis	2 *
4	Yes	Four-man chess club evaluating past performance and planning future performance	2 *
5	Yes	Seven-man college group in discussion skills planning own operations	2 *
6	Yes	Four-man steering committee planning arrangements for Christmas party	3 *
7	Yes	Four-man chess club evaluating past performance and planning future operation	4
8	No	Four-man chess club solving two-move problem	4
9	No	Three-man group on third group projective story	4
10	No	Four-man chess club solving two-move problem	5
11	No	Four-man chess club solving two-move problem	5
12	No	Three-man group on fourth group projective story	5
13	Yes	Seven-man college group on discussion skills	5
14	No	Three-man chess club constructing chess problem	6
15	No	Four-man chess club solving two-move problem	6
16	No	Three-man group on fifth group projective story	6
17	No	Three-man group on second group projective story	6
18	No	Three-man role-playing group deciding between two fictional alternative purchases	6
19	No	Eight-man academic discussion group on theory	7
20	No	Three-man chess club constructing a chess problem	8
21	No	Three-man chess club constructing a chess problem	10
22	No	Five-man chess novice group planning second move of seven-move problem	11

\* Significant at or beyond the .05 level.

they are still uncertain about the identity of the pieces and the best mode of attack. The phase sequence of their interaction up to their decision as to their first move is in complete accord with the hypothesis. In the planning of their second move, however, they were able to draw upon their earlier discussion in which they had discussed future moves as well, and the problem was truncated for them in terms of the reduced emphasis on orientation, just as it had been for the previous chess group described above.

A similar sequence of topical cycles which seemed to involve successively less orientation is seen in Cases 2, 9, 12, 16, and 17. In these cases



the same group made up stories to the five cards of the Guetzkow and Henry Group Projection Sketches (6). The interaction only up to the point of completion of the first card (Case 2) was markedly in the expected phase order.

In Cases 14, 20, and 21, members of a chess club were confronted with the task of *constructing* an original chess problem, starting from an empty board. They were fully oriented to the task at the beginning of the sequence, since they were quite familiar with chess problems. They began with suggestions in order to determine initial placements of pieces on the board, and they became more concerned with problems of orientation as more pieces were added to the board and the complications thus increased. Two of these three sequences were the direct reverse of the phase order expected under full-fledged conditions on problems of orientation and control. It may be that certain types of creative problems typically produce this type of approach, and that a different sort of phase hypothesis could be evolved for such tasks. An increasing complexity of orientation needed as the task evolves might be a basic factor in limiting the number of persons who may work together successfully on creative problems.

To test the conformity between the observed orderings and the orderings predicted by our original theoretical analysis, we have employed a model based upon the occurrence of the maxima and minima in the predicted phase rather than a model in which absolute magnitudes were considered. Table 26.2 presents the hypothesis in a form appropriate for this type of test. Table 26.2 may be compared with Figure 26.2 to clarify its meaning.

The following hypothetical example, which involves only one type of act, illustrates this method of analysis.

#### Phases in Which Acts of Orientation Are:

	HIGH	INTERMEDIATE	LOW
Predicted:	First	Middle	Final
Observed:			
Example I	First	Middle	Final
Example II	Middle	First	Final
Example III	Final	Middle	First

In Example I, the observed values match exactly with the prediction; that is, the high, intermediate, and low values occur in the periods in which they were predicted to occur. In Examples II and III there are departures from the prediction. The main point of this discussion of the model is the justification of the method adopted to evaluate the degree of departure. We believe that it is inappropriate to consider the goodness

of fit in terms of the number of instances in which the predicted values match the observed values. In terms of matches alone, there is no distinction between II and III; in each example one element corresponds with the predicted placement. This is not a satisfactory description, however, since one feels that there is a more serious departure from expectation if the predicted high is interchanged with the predicted low, as in III, than if the predicted high is interchanged with the predicted median, as in II. Fortunately, if we count not the number of matches but the number of *transpositions* of adjacent values required to establish the predicted order, we may take account of the distinction between II and III.

TABLE 26.2

EXPECTED PHASE IN WHICH FREQUENCIES OF ACTS BY TYPE WILL BE HIGH, INTERMEDIATE, AND LOW UNDER CONDITIONS OF THE FULL-PLEGDED PROBLEM

Type of Act	High	Intermediate	Low
Orientation	First	Middle	Final
Evaluation	Middle	Final	First
Control	Final	Middle	First
Negative	Final	Middle	First
Positive	Final	Middle	First

To illustrate the counting of transpositions, Example II can be modified to fit the predicted order by exchanging the middle and first element, whereas for Example III there are three transpositions required: first with middle, first with final, and middle with final. A statistical evaluation of the difference between the predicted and observed orders can be made on the basis of the number of transpositions required. It can be demonstrated<sup>1</sup> that if there are three or fewer transpositions, the null hypothesis may be rejected at the .05 level.

By reference to Table 26.1, it may be noted that six of the eight sessions which were judged to have fulfilled the stated necessary conditions were also significant in the sense that they would require only the three transpositions or less required to reject the null hypothesis of random distribution at the .05 level. Two sessions which we judged to meet the conditions were not significantly different from random expectations.

It is thus apparent that cases which meet the conditions do deviate significantly from random expectations, and that cases which do not meet the conditions do not deviate significantly. In short, one or more alterna-

<sup>1</sup> The statistic employed is essentially a repeated application of Kendall's rank correlation coefficient (7, 47). Persons wishing to perform computations for orderings of other sizes can obtain the appropriate coefficients of the powers of  $\tau$  to be inserted in the formula from Kendall (7, 388-437).

tive phase hypotheses, accompanied by corresponding specification of conditions, are required before we can duplicate the relatively accurate predictions of the occurrence of maxima and minima which we have made for the eight individual cases in question.

### Discussion of Results

The 14 cases which failed to meet the conditions also failed to conform to the phase movement predicted for full-fledged conditions. Nevertheless, when all of the acts of the 22 cases are summed together by type of act and phase, the values for each type of act have maxima and minima which correspond exactly with the particular phase movement under discussion. These data are presented in Table 26.3 and earlier, graphically, in Figure 26.2. How is this paradoxical finding to be interpreted?

It may be that we simply have a sample of cases in which compensating differences happen to exist, and that new aggregates of cases would fail to show the pattern. On the other hand, it may be that certain conditions are

TABLE 26.3  
ACTS BY TYPE AND PHASE, TOTAL FOR 22 CASES

TYPE OF ACT	PHASE			TOTAL
	First	Middle	Final	
Orientation	1,668	1,170	916	3,574
Evaluation	1,550	1,792	1,656	4,998
Control	285	364	429	1,078
Negative	275	374	408	1,057
Positive	984	1,058	1,361	3,403
Total *	4,762	4,758	4,770	14,290

\* The totals in phases are not quite equal, due to the fact that no systematic technique was employed to distribute the extra acts when the total acts of a session were not divisible by three.

operating which tend to be similar from case to case, in spite of particular differences. There are certain conditions which seem to be more or less inherent in the nature of the process of interaction or communication itself. If this were not so, it would be difficult to produce a set of categories of the sort used in the present observations, which we believe to be very general and applicable in formal terms at least, to any interaction.

We suggest that parts of the interaction process itself tend to affect other parts in such a way that, at the time of any given act, the acts which have gone before, or which have not yet occurred but are expected to come, constitute a set of "internal" conditions which operate in addition to whatever "external" conditions there may be of the sorts specified in

the statement of the hypothesis. We know that in the more microscopic act-to-act sequences this is the case. Questions tend to be followed by attempted answers, and these in turn tend to be followed by positive or negative reactions or more questions (2, 129-131). These are "internal tendencies" of the process itself on a microscopic time span. It may be that similar internal tendencies operate on the more molar level of longer chains of sequences leading to group decision.

It can now be pointed out that the rationale of the phase hypothesis presented earlier is essentially an argument based on an assumption that there are internal tendencies of interaction considered as a system distributed between persons and through time. If one started with the assumption that interaction does constitute a social system and that it will tend to exhibit certain systematic properties on that account, how would he go about demonstrating this empirically? The critical logical difficulty would seem to be that the system he is trying to investigate never operates apart from external conditions which are expected to influence the behavior which actually occurs. The effects of the external conditions are always compounded with, or confounded with, the effects of the internal conditions.

One approach, perhaps, is to attempt to observe the system operating in a set of conditions complete enough and balanced in such a way as to call out the full range of internal tendencies or possibilities of the interaction process, so that the empirical observations might display in most articulate form the effects of the internal conditions. Here it may be pointed out that the description of the set of conditions we have called the *full-fledged* problem is essentially an attempt to specify a set of external conditions which might meet this methodological requirement so far as the problem the group is working on is concerned.

The other approach which suggests itself is an attempt to randomize in some fashion the kinds of external conditions involved, and to deal with large aggregates of cases. If there are internal tendencies characteristic of interaction as a systematic process or social system, the similarity of these tendencies from case to case, in spite of the differences due to external conditions, would be expected to exert a constant "biasing" effect away from randomness. In aggregates of cases, then, where the external conditions of individual cases are varied enough to average out, one would expect the effects of the internal-system tendencies to become apparent.

In short, the present reasoning suggests that there are two ways of detecting the presence and nature of rather general internal tendencies, if, indeed, they exist: first, by letting them operate under *full-fledged* rather than *truncated* external conditions, and second, by averaging out various kinds of truncation and accentuation by adding many widely varied cases together.



If later research indicates the general methodological position taken here to be tenable, the problems of experimentally investigating how particular types of external conditions influence the course of interaction are greatly simplified. It may be that empirically average phase tendencies like those presented in Table 26.3 can be taken as sufficiently representative of the effects of parts of the process on other parts, i.e., the social system effects. In experimental designs, then, where a full-fledged problem is used as the basic testing situation, deviations from the empirical norm might be used as evidences of the effects of known or experimentally introduced conditions. For example, the experimental introduction of persistent difficulties of communication or orientation might upset the phase sequence expected on the basis of the internal tendencies of the interaction system alone.

Conversely, in using the method for clinical analysis or training of particular groups, groups might be set up under full-fledged conditions, and the deviations from the empirical norm used as diagnostic indicators of otherwise unknown characteristics of the group or the members. For example, the appearance of a high rate of negative reactions in the first phase of a standard full-fledged problem might indicate the presence of hostilities not arising out of the present interaction itself, but existing as a prior condition.

### Summary

A set of categories for the firsthand observation of group process has been presented. A set of conditions has been described which we believe to be characteristic of many staff conferences, committees, and similar groups dealing with problems of analysis and planning with the goal of group decision. We have presented a hypothesis which states that under these specified conditions the process tends to move through time from a relative emphasis upon problems of *orientation*, to problems of *evaluation*, and subsequently to problems of *control*; and that concurrent with these transitions, the relative frequencies of both *negative reactions* and *positive reactions* tend to increase.

It has been shown that all 22 sessions available to the experimenters from prior observations, when considered as an aggregate, show a significant departure from a random distribution of acts between phases. It has been shown further that the observed significance is attributable to the inclusion of cases which meet the specified conditions. Individual cases which do not meet the conditions do not show a significant departure from a random distribution of phase movements.

However, when all of the acts of the 22 cases are summed together by type of act and phase, the values for each type of act have maxima and

minima which correspond exactly with the particular phase movement postulated for individual cases under the specified full-fledged conditions. This finding may be accidental. The suggestion is offered, however, that in addition to the external conditions specified, the interaction process should be considered as a system, with internal tendencies which make each part of the process a condition to other parts. These "internal" conditions are assumed to be similar to some degree from case to case and to exert a constant "biasing" effect. This biasing effect becomes apparent either in individual cases under full-fledged external conditions or in aggregates of cases in which differences in external conditions average out.

It is suggested that if the phase movement described here does represent the effect of conditions internal to the process itself, it may be used with some advantage as a base-line for the detection of discrepancies or accentuations due to known or experimentally introduced external conditions or, conversely, as diagnostic indicators of the presence of otherwise unknown conditions.

Finally, the general method of testing for the existence of any given phase pattern seems to open the way for an experimental attack on problems of determining the effects of various patterns of process under various conditions—effects on the motivation and satisfaction of participants and on their performance of the group task.

#### REFERENCES

1. Bales, R. F., & Gerbrands, H. The interaction recorder: An apparatus and check list for sequential content analysis of social interaction. *Human Relations*, 1948, 1, 456-463.
2. Bales, R. F. *Interaction process analysis: A method for the study of small groups*. Cambridge, Mass.: Addison-Wesley Press, 1950.
3. Bales, R. F. A set of categories for the analysis of small group interaction. *American Sociological Review*, 1950, 15, 257-263.
4. Dewey, J. *How we think*. Boston: Heath, 1910.
5. Elliott, H. S. *The process of group thinking*. New York: Association Press, 1928.
6. Guetzkow, H., & Henry, W. *Group projective sketches*. Ann Arbor, Mich.: Univ. of Michigan Press, 1949.
7. Kendall, M. G. *The advanced theory of statistics*. London: Lippincott, 1943.
8. Lasker, B. *Democracy through discussion*. New York: H. W. Wilson Co., 1949.
9. Lippitt, R. An experimental study of authoritarian and democratic group atmospheres. *University of Iowa Studies in Child Welfare*, 1940, 16, No. 3, 43-195.
10. Rogers, C. R. *Counseling and psychotherapy: New concepts in practice*. Boston: Houghton Mifflin, 1942.

## An Experimental Study of Cohesiveness and Productivity

Stanley Schachter, Norris Ellertson, Dorothy McBride,  
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The once modest concept of cohesiveness has in recent years become distinguished by the proliferation of meaning attached to it. With the growing interest in group psychology, cohesiveness as a concept has assumed some importance, for it represents an attempt to formalize or simply to verbalize the key group phenomena of membership continuity—the “cement” binding together group members and maintaining their relationships to one another. Discussions of this group property have been notably loose and *cohesiveness* has been defined variously as referring to morale, “sticking togetherness,” productivity, power, task involvement, feelings of belongingness, shared understanding of roles, and good teamwork.

It is possible roughly to categorize these assorted meanings into two classes. One class of definitions centers chiefly around particular aspects of group behavior or process and the word *cohesiveness* refers to such things as the morale, efficiency, or “spirit” of the group. The attractiveness of the group for its members may be implicit in such formulations, but is usually of secondary importance. The second class of definitions is concerned exclusively with the attractiveness of the group for its members. Thus, Festinger, Schachter, and Back (3) define *cohesiveness* as the average resultant force acting on members with direction toward the group. No assumptions are made about the behavior or “atmosphere” of cohesive groups.

The distinction between these two formulations becomes clear in their treatments of the relationship of cohesiveness to group productivity. The cohesiveness-morale formulation suggests that since a cohesive group is

From *Human Relations*, 1951, 4, 229-238. The research was conducted in the Laboratory for Research in Social Relations, University of Minnesota, under a grant from the Carnegie Corporation. The article is reprinted by permission of the authors and *Human Relations*.

marked by good morale and since the members of such a group like one another and get on well together, it should follow that the more cohesive the group the greater should be its productivity. At least two studies have tested this hypothesis. R. L. French (4) in a study of a military camp has attempted to relate a sociometric index of cohesiveness of the company to a variety of measures of performance in drill and athletic competition, academic work, participation in community activities, etc. Darley, Gross, and Martin (2) have investigated the relationship of sociometric indices of cohesiveness to judges' ratings of the excellence of group written essays. Neither study has supported the anticipated relationship.

The cohesiveness-attraction theory leads to a very different set of derivations (see Chapter 15). From this theory the derivation has been made (1, 3) that the greater the cohesiveness the greater the power of the group to influence its members. The power of the group will be equal to the magnitude of the force on the member to remain in the group. If the magnitude of change which the group attempts to induce is greater than the force on the member to stay in the group, the member will leave the group. The greater the force to remain in the group, the more successful will be the attempts of the group to influence the member.

If we conceive of group productivity as in part a function of the success of the group at influencing its members, it becomes clear that cohesiveness should be one of the determinants of productivity. Whether cohesiveness will increase or decrease productivity, however, is determined largely by the direction of group induction. If the group attempts to influence its members to increase production, high cohesive groups should be more productive than low cohesive groups. If the group attempts to decrease production, low cohesive groups should be more productive than high. In both cases, the more cohesive groups are more successful at influencing their members. The present study was designed to test these implications of the cohesiveness-attraction theory for productivity.

### The Experiment

There were four combinations of the variables, cohesiveness and direction of induction:

1. High cohesive, positive or speed-up induction (abbreviated Hi Co + Ind).
2. Low cohesive, positive induction (Lo Co + Ind).
3. High cohesive, negative or slow-down induction (Hi Co - Ind).
4. Low cohesive, negative induction (Lo Co - Ind).

Except for variations introduced in order to manipulate the two variables, the procedure described below was followed in all experimental conditions. Each experimental group was made up of three people. When



possible, the three people were all subjects. If because of scheduling difficulties it was possible to obtain only one or two subjects at a particular time, paid confederates posing as subjects were introduced to complete the group.

All subjects were female student volunteers from undergraduate education and psychology classes. The confederates, too, were female students. The subjects for any particular group were taken from different classes so that they would not know one another. There were 13 subjects in each of the high cohesive conditions, and 12 in each of the low cohesive conditions.

The members of each group were first introduced to one another. The experimenter explained that this was a study of group psychology, elaborated briefly, and then went on to a description of the specific task of the group—the cooperative production of cardboard checkerboards. There were supposedly three jobs to be done: cutting the cardboard, mounting and pasting it on heavier stock, and painting the boards through a stencil. One group member was to be assigned to each of the jobs. In explaining the task, the experimenter implied that speed and quantity of production were desirable.

After these preliminaries, each member of the group was assigned to a different workroom. Here, although all subjects were assigned the job of cutting, each girl was given the impression that the other two members were painting or pasting. The members of the group were allowed to communicate with one another only by notes delivered by a messenger. A subject was allowed to write as many notes as she pleased to either of the other two group members. Actually, all notes were intercepted by the messenger, who substituted notes from a standard prewritten set. The subject, however, believed the notes that she received were written by the other members of the group. These notes furnished the means by which direction of induction was manipulated.

Every four minutes the messenger delivered prewritten notes to the subject and collected both any notes the subject had written and the cardboard she had cut during the preceding four minutes. The subject cut cardboard for 32 minutes. Then, after filling out a questionnaire, she was brought together again with her group. The purpose of the experiment was discussed and the various deceptions were explained in detail.

### The Manipulation of the Variables

1. *Cohesiveness* has been defined as the average resultant force acting on members to remain in the group. The valence of the group derives from at least two sources: the attractiveness of the activities mediated by

the group and the attractiveness of other group members. High and low cohesiveness were produced here by manipulating the attractiveness of the group members.

In the speeches recruiting subjects, the experiment was described as a study concerned with "people who really like one another." It was emphasized that on the basis of recent and striking research, it was now possible to select people who would be genuinely fond of one another. This research would determine the selection of work groups. Volunteers filled out questionnaires designed ostensibly to get detailed personality information. Examples of the questions asked are, "If your worst enemy were to describe you, what do you think he would say?" "Which people in history do you most admire?" "Would you have any objection to our looking over the test data available on you at the records office?"

In the experiment proper, as soon as a subject arrived and before she had met the other members of her group, she was privately interviewed by one of the experimenters. During this interview, apparently designed simply to collect routine information, the interviewer informed the subject in the high cohesive conditions that she was a member of an extremely congenial group and that "there is every reason to expect that the other members of the group will like you and you will like them." In the low cohesive conditions, subjects were told that due to scheduling difficulties it had been impossible to bring together a congenial group and that "there is no particular reason to think that you will like them or that they will care for you."

At the end of the experiment, the subject filled out a cohesiveness questionnaire designed to test the success of the manipulation. The following questions were asked:

- A. How did you like your team?
- B. If you were taking part in another experiment, how much would you like to work with these same girls?
- C. How much do you think you would like to see your teammates?

Questions A and B were answered on 5 point rating scales designed to determine how much the subject liked her group and how much she would like to work with them again. Question C is a 7 point scale devised by Back (1) using an abbreviated Thurstone technique, to measure the "intensity of attraction."

Table 27.1 presents the data from this questionnaire. All scores represent the mean position of all subjects in each of the four conditions. The higher the score, the greater the cohesiveness. For question C the score was the highest point checked on the scale. With the direction of induction held constant, the scores on each question are higher for the high cohesive than for the low cohesive groups.

On questions *B* and *C*, all differences between high and low cohesive groups in either induction condition are significant by *t* test at the 1% level of confidence. On question *A* the difference between the Hi+ and Lo+ is significant at the 5% level and that between Hi- and Lo- at the 20% level of confidence. The manipulation seems to have been successful in producing high and low cohesiveness.

TABLE 27.1  
RESPONSES TO COHESIVENESS QUESTIONNAIRE

	<i>N</i>	Question A: "Like Team"	Question B: "Work with Same Girls"	Question C: "Intensity of Attraction" Scale
Hi Co + Ind	13	3.62	3.77	3.77
Lo Co + Ind	12	2.92	2.92	2.50
Hi Co - Ind	13	3.85	4.31	3.69
Lo Co - Ind	12	3.50	3.25	2.75

2. *Direction of induction* refers here to attempts by the group to influence a member to increase or decrease her rate of production. All attempts to influence the subject were via prewritten notes which the subject believed were from other members of her group. During the first 16 minutes of the experiment, all subjects received five notes which made no attempt to influence their rate of production. In the remaining 16 minutes, the subject received six notes all attempting either to increase or to decrease her rate of production. In the positive induction conditions, these notes requested that she work more rapidly; in the negative induction conditions, the notes requested that she work more slowly. The specific notes and the time schedule governing their delivery follows:

*Experimental  
time elapsed  
before delivery*

4'

*All subjects received these notes:*  
"I wonder who will use these boards." (signed) Paster.  
"I wish I had a coke right now." Painter.

8'

"Gee, but my fingers are getting sticky." Paster.

12'

"I wish I had a radio in here." Paster.  
"Don't you think this will make awfully loud checker-boards?" (smear of red paint). Painter.

*Positive Induction Subjects  
Received these Notes:*

16' "Can you hurry things up a bit?"  
Painter.

*Negative Induction Subjects  
Received these Notes:*

"Let's try to set a record—the slowest subjects they ever had."  
Painter.

- 20' "The painter is hounding me for more boards—can you cut them them out a little faster?" Paster.  
 "Hate to bother you, but I'm twiddling my thumbs. Couldn't you speed it up?" Painter.
- 24' "I've only got one board left, can you step on it?" Paster.
- 28' "Time's running out, let's really make a spurt." Paster.  
 "The messenger says we only have a few minutes—see how fast we can can go." Painter.
- "You're getting way ahead of me—relax." Paster.
- "Please work a little slower. I'm flooded in cardboard and drowning in paint." Painter.
- "Take it easy, I'm tired." Paster.
- "Painting takes more time than you think—slow down." Painter.
- "We've done a lot of these things. Let's take it easy now." Paster.

## Results

The difference in the number of cardboards cut during the intervals of neutral and of induction notes is taken as an indication of the extent of acceptance of induction.

Table 27.2 presents data on the effect of induction on the subject's productivity.

TABLE 27.2  
MEAN DEVIATION FROM LEVEL OF PRODUCTION IN THE 8'-16' PRE-INDUCTION PERIOD

	<i>N</i>	16'-24' Induction Period	24'-32' Induction Period
Hi Co + Ind	13	+2.92	+5.92
Lo Co + Ind	12	+2.92	+5.09
Hi Co - Ind	13	-1.00	-2.16
Lo Co - Ind	12	-.58	-.42

For purposes of analysis, the experiment is divided into four 8-minute periods. The 8'-16' period is taken as a base line. During these 8-minute periods the subject receives only neutral notes and no attempt is made to influence her rate of production.<sup>1</sup> The figures reported represent mean deviations from this base during the two later induction periods.

It is clear, first, that the direction of "group" induction, via the notes, had a major effect on the rate of production. In the positive induction conditions, production increases markedly. In the negative induction conditions, the rate of production decreases. During either of these two induction periods (16'-24' and 24'-32'), differences between production

<sup>1</sup> During the first 8-minute period, the subject was growing accustomed to her job and the note writing procedure. In addition, she received only two notes during this time, whereas in each of the other 8-minute periods she received three notes. For these reasons, data for the first period are not comparable to the remaining periods and are not reported.



in positive and negative induction conditions are all significant by *t* test at the 1% level of confidence, at least.

The relations between cohesiveness and productivity are as follows: Communications calling for increased production result in no significant differences between the high and low cohesive groups. There are differences, however, when the notes urge a reduction in production. In this "slow-down" condition, subjects in high cohesive groups decrease continuously from induction period to induction period. Scores for both periods are significantly below the base line level of production at better than the 1% level of confidence. In the low cohesive groups, subjects decrease slightly in the 16'-24' period and then increase their output. Neither of these scores is significantly below base line production. The difference between Hi Co- and Lo Co- subjects, in the 24'-32' period, is significant by *t* test at better than the 2% level of confidence. In the 16'-24' period, the difference is in the predicted direction but is not significant.

The effects of the cohesiveness variable stand out more clearly in Table 27.3.

TABLE 27.3  
ACCEPTERS AND NON-ACCEPTERS OF GROUP INDUCTION

	Number of Accepters	Number of Non-Accepters
Hi Co + Ind	13	0
Lo Co + Ind	11	1
Hi Co - Ind	11	2
Lo Co - Ind	4	8

This table presents a breakdown, by condition, of subjects who accepted and who did not accept group induction. A *non-accepter* is defined as a subject who, during at least one of the last two periods, shifted her rate of production in a direction opposite to that of group induction. Thus, a negative induction subject who in at least one of these periods increased her rate of production over that of the immediately preceding period would be classed a non-accepter. Similarly, a positive induction subject who decreased her rate of production would be so classified. Again there are no differences between Hi Co+ and Lo Co+; almost all subjects in both conditions accepted induction. Differences between Hi Co- and Lo Co- are marked. Seventy-five per cent of all Lo Co- subjects are non-accepters and only 15% of Hi Co- are non-accepters. This difference is significant at the 1% level of confidence using Fisher's exact treatment of a 2 × 2 table.

Table 27.4 presents gross production data for the last three periods. The figures represent the mean of the total number of cardboards cut by the subjects in each condition. The differences between high and low cohesive groups are similar to those presented in Table 27.2. In the negative induction conditions, low cohesive subjects are less acceptant of induction and more productive than high cohesive subjects. Though, again, there are no significant differences in the positive induction conditions, the small differences that do exist are in favor of the low cohesive subjects. This may be attributable to the lower initial level of cutting of the high cohesive subjects. Despite the random assignment of subjects to the various experimental conditions, for some reason subjects in the Hi Co+ groups cut at a slower rate than subjects in any of the other conditions.

TABLE 27.4  
MEAN NUMBER OF CARDBOARDS CUT IN EACH PERIOD

	<i>N</i>	8'-16' Pre-Induction Period	16'-24' Induction Period	24'-32' Induction Period
Hi Co + Ind	13	5.31	8.23	11.23
Lo Co + Ind	12	6.16	9.08	11.25
Hi Co - Ind	13	6.31	5.31	4.15
Lo Co - Ind	12	6.42	5.84	6.00

In summary, the data indicate no necessary relationship between cohesiveness and high productivity. Group members will accept induction either to increase or decrease production. Whether or not highly cohesive groups are more likely to develop standards of high production rather than low production is a separate question, but evidence from industrial studies (2), e.g., the slow down, indicates that this is not the case.

Cohesiveness appears to be a determining variable in the negative but not in the positive induction condition. In the latter, both high and low cohesive subjects accept group induction and increase their output markedly. In the negative induction condition, the high cohesive subjects are more accepting of group induction and, consequently, less productive than low cohesive subjects.

### Discussion

These experimental results indicate that it is necessary to study more carefully the relationships between the direction of induction and its acceptance. In an earlier study (3), induction has been formulated as the direction imposed on an own force. It is presumed that a relationship

exists between inducer and inducee such that the inducer either controls or represents a goal object for the inducee. The desirability of the goal object is a determinant of the magnitude of the force on the inducee toward the goal. The specific activities necessary to achieve the goal determine the direction of this force. At various times, a number of very diverse activities may lead to any one goal. In order, for example, that a farm boy be able to please his father, it may be necessary at one time to slop the hogs and at another time to mix chicken mash. Thus, the inducer can modify the direction of an inducee's own force by specifying the activities necessary to reach the goal. The inducer's success will depend on the direction and magnitude of other forces acting on the inducee. If the specified activity is negatively valent, or if other inducing agents are attempting to exert contrary influence, the inducer may be unsuccessful. Induction will be accepted up to the magnitude of the force toward the goal object. If other forces of greater magnitude and opposite direction are active, induction will be unsuccessful.

In the present experimental arrangement it is assumed that there are essentially two forces operating on the subject:

1. A force to be an accepted member of his particular group ( $f_{p, gr}$ ).
2. A force to do a good job and win the praise of the experimenter ( $f_{p, exp}$ ).

It is presumed that the magnitude of  $f_{p, exp}$  is similar in all experimental variations and that the magnitude of  $f_{p, gr}$  is greater in the high than in the low cohesive conditions. The direction of  $f_{p, exp}$  is always the same, since the experimental instructions implied that speed and quantity of output were important. The direction of  $f_{p, gr}$  is different in the positive and the negative induction situations. In the positive condition the group induces the subject to speed up and in the negative condition, to slow down.

It is apparent that the force constellations in the positive and the negative inductions situations are quite different. In the positive induction condition the two forces,  $f_{p, gr}$  and  $f_{p, exp}$ , have precisely the same direction. In the negative induction condition they have opposite directions.<sup>2</sup> Our experimental results suggest that only when these two forces are opposite in direction does the magnitude of  $f_{p, gr}$  determine the degree of acceptance of induction.

More generally, this relationship may be stated in this way: Induction is formalized as the direction imposed on an own force. The success of

<sup>2</sup> There are two bits of related evidence which support this analysis. Table 27.3 shows that 10% of all cases in the negative induction conditions did at some time reject group induction, whereas only 1% of subjects in the positive induction conditions did so. Further, in Table 27.2 it can be seen that positive induction subjects accelerated their rate of production at a far more rapid rate than did negative induction subjects decrease their production rate.

induction will depend upon the magnitude and direction of other forces operating in the field. If other forces are opposite in direction to the induced direction, the acceptance of induction will depend upon the magnitude of the own force toward the goal controlled by the inducing agent. If all other forces are similar in direction to the induced direction, the acceptance of induction will be relatively independent of the magnitude of this own force.<sup>3</sup>

The application of this conceptualization to predictions of a differential acceptance of induction in high and low cohesive groups demands further specification of the magnitude of forces opposite in direction to the group forces. If the opposing force has a magnitude greater than that of the force toward the high cohesive group, or less than that of the force toward the low cohesive group, there should be no differences between high and low cohesive groups. Between these limits, high cohesive groups should win greater acceptance of induction than low cohesive groups.<sup>4</sup> In the present experiment, then, it is presumed that in the positive induction condition any opposing forces that existed were of a lesser magnitude than the force toward the low cohesive group,<sup>5</sup> and that in the negative induction condition the magnitude of the opposing force was between the specified limits.

Though the term *group productivity*, as employed in this study, has a very limited and specific meaning (output per unit time), these elaborations of the cohesiveness-attraction theory do seem applicable to other formulations of productivity. *Group productivity* does commonly have a variety of other meanings: for example, the quality of a group product; or the speed and efficiency with which a group locomotes toward a given goal; or the degree of realization of group potential; etc. No matter what the criteria of productivity, or the structure of the particular task, high cohesive groups should (within the specified limits) be more successful at overcoming forces with direction opposite to group induced direction.

It would be possible to further test this formulation of the induction process by reversing the experimental design used in this study. If the experimenter were somehow to induce forces on the subjects to work slowly, we should predict the opposite of the results reported in this paper. There should be differences between high and low cohesive groups in the positive induction condition and no differences in the negative induction condition.

<sup>3</sup> Essentially, this is a theory of the occurrence or nonoccurrence of a specific induced act. Implicit is the assumption that if the resultant force towards a particular activity is greater than zero, the person will perform that activity whether the resultant force has a high or low magnitude. Quite possibly employing criteria such as "willingness to perform an activity," or "effort expended attempting to overcome a barrier," will necessitate further refinement of the present theory to include the effects of varying **magnitudes of resultant force.**

<sup>4</sup> It is conceivable that if the induction period had been extended in time, restraining forces could have grown to such magnitude that a difference between high and low cohesive groups would have appeared.



## REFERENCES

1. Back, K. W. The exertion of influence through social communication. Unpublished doctor's dissertation, Massachusetts Institute of Technology, 1949.
2. Darley, J., Gross, N., & Martin, W. Studies in group behavior: V. Factors related to productivity. Unpublished manuscript.
3. Festinger, L., Schachter, S., & Back, K. *Social pressures in informal groups*. New York: Harper, 1950.
4. French, R. L. Sociometric measures in relation to individual adjustment and group performance among naval recruits. *American Psychologist*, 1949, 4, 262. (Abstract)



**Part Five**

**THE STRUCTURAL PROPERTIES OF GROUPS**





## The Structural Properties of Groups: Introduction

Suppose that you, as a person interested in group life, have the chance to visit a staff meeting of a department within a large business concern. All of the members of the conference are strangers to you, but you happen to know that one is a vice-president of the company and another is a junior executive just a few years out of college. You decide to see if you can determine, on the basis of the interactions in the conference, which person is the vice-president and which the junior executive. These two, of all the participants, will be the farthest separated on the company's table of organization. Soon you begin to note that two of the participants act in quite different ways. The man whom you believe to be the junior executive addresses the majority of his remarks to the man you believe to be the vice-president. Moreover, he chooses his words with care in order that he not seem to imply any criticism of the other man or appear inadequate. He listens carefully to what the vice-president has to say and is usually ready to see the reasonableness of the arguments made by him. He is friendly toward the boss, ready to tell a joke or talk about his family, and to copy some of the older man's mannerisms.

In contrast, the vice-president talks pretty much to the entire group. He freely offers information, advice, and even criticism to others. He seldom makes critical remarks about himself. Nor is he nearly so ready as the younger man to listen to statements made by the rest of the group. He is more likely to defend his own position than to see the value in the points made by the staff. And on the whole he is less inclined to idle talk than is the junior executive.

You may come away from the meeting feeling that the two men acted the way they did because they had quite different personalities, and you would undoubtedly be correct—in part. If, however, you were to see the junior executive in a meeting with *his* staff in which he is now the boss, you would probably be surprised to see how differently he behaves. Now it is likely that you would find the young man acting toward others in a way very similar to that shown by the vice-president in the earlier meeting. What are the features of the two situations that produce such marked differences of behavior?

To answer this question we must carefully examine what is commonly

called the *structure* of the group and the *position* each person occupies in the structure. As we pursue this analysis we shall see that an adequate description of any group will reveal that it has not one structure, but several, and that any particular individual has one or more positions in each of these structures.

### Nature of Group Structure

Americans have often been pictured as possessing an unbounded proclivity for organization. It has been said that a shipwrecked collection of Americans would first set about the task of electing a president, a treasurer, a recorder, and presumably a corresponding secretary, regardless of the need for such officials. Whether or not this national stereotype of Americans reflects a real cultural idiosyncrasy, groups all over the world do become organizations with differentiated parts. Whenever a group continues to exist for some time with group activities to perform, there arises a strong tendency for divisions of responsibility to come about. One part of the group is made regularly responsible for certain activities. Soon, too, one part, or set of people, becomes responsible to another in the performance of these group tasks. It has been proposed (see Stogdill's definitions in Chap. 4) that it is this differentiation of responsibility that distinguishes an organization from a group.

It should be noted, however, that a group may be differentiated with respect to other features in addition to responsibility. A number of secretaries in a large organization, for example, may be indistinguishable from one another in regard to their responsibilities (i.e., they may all occupy the same position in the organization as far as responsibility is concerned) and yet form several clearly distinguishable friendship cliques. Or, if we were to look at the organization from yet another point of view, by determining its distinguishable parts with respect to the communication of information, we might find the president and his secretary in identical or closely connected positions in the communication network.

When a group acquires some stability in the differentiation of its parts, it may be said to be structured. The *structure* of a group consists of its distinguishable parts, or *positions*, and of their arrangement with respect to one another. The positions of a group are conceived of as relatively homogeneous parts which, in principle, may contain any number of people (including zero under some conditions, since it is possible to speak of an "unfilled position"). It helps greatly in the task of predicting an individual's behavior in a group to be able to specify his location in the group's structure.

In this conception of group structure, the exact way in which the group is differentiated into various positions will depend upon the aspect of the

group being considered. We have already noted that the distinguishable parts of a group may be different when viewed from the point of view of responsibility, friendship, or communication. Any given individual may have different positions in the group, depending upon which criterion of differentiation is employed to determine his position.

It is clear, then, that groups may display differentiation with respect to several criteria (or along several "dimensions") and that each member will occupy a position in regard to each. It is one of the basic tasks of the student of group dynamics to determine the criteria that in fact serve as the basis for the differentiation of any given group. Bales (Chap. 3) proposes the following bases of differentiation:

1. The differential degree to which members have access to resources
2. The differential degree to which they have control (power) over other persons
3. The differential degree to which they have importance or prestige
4. The differential degree of solidarity or identification each has with the group.

Other bases undoubtedly also exist. Stogdill holds, for example, that differentiations in terms of functions to be performed and interpersonal responsibilities are of fundamental importance. We shall see later that it is useful, too, to determine a person's position in a communication network. Although it is not now possible to make an exhaustive list of possible criteria of differentiation, the ones mentioned here are certainly important possibilities.

### Origins of Structure

Much has been written about the reasons that groups become structured, and we shall not attempt to summarize this literature. It will be useful, however, to note that three rather different kinds of factors tend to produce stable differentiations within groups. The first set stems from requirements for efficient group performance, the second arises from the different abilities and motivations of different individuals, and the third derives from physical and social characteristics of the group's environment.

*Efficient group performance.* As a group organizes to do work, it often finds that it is more effective if it "specializes" the tasks of its members. Thus, one subgroup of a fraternity becomes responsible for maintenance of the house, another arranges social activities, another maintains liaison with the interfraternity council, another supervises the pledges, and so on. In large, formal organizations this specialization is quite self-consciously supervised by a specialist in specialization. It is the objective of this person to construct a structure which will result in optimal organiza-

tional performance. Usually he is primarily concerned to see that each position (*a*) consists of a set of functions which can readily be performed by one individual (or sometimes a group), (*b*) has unambiguous responsibility to some other position, (*c*) has clear authority over other positions, and (*d*) is directly connected in a communication network with some positions but not with others. Whether or not a group recognizes explicitly any relation between the way it is structured and its effectiveness, most groups find it advantageous to develop some specialization, some regularity of assignments and responsibilities, and some dependability in its internal communication and coordination.

*Abilities and motivations of individuals.* Many writers have looked for the origin of group structure in the characteristics of the individuals composing the group. Barnard (1), for example, stresses heavily the way in which individual differences in ability and temperament lead people to prefer to do certain group tasks themselves and to give other tasks to other people. Similarly, some people like to assume responsibility while others prefer to be told what to do. Some gain satisfaction from fame and exhibitionism while others are shy and retiring. It has been observed frequently in informal discussion groups that one person "naturally" tends regularly to be perhaps the compromiser, the scapegoat, or the joker. From observations of this sort and everyday experience in groups, it is clear that individual abilities and predispositions do result in regularities of interaction and differentiations among the parts of a group.

Another facet of individual motivation has also been proposed as a source of group structure. It has been suggested by Bales (Chap. 3) and others that an individual's security derives largely from his being able to count upon a stable social environment. All members of a group, whether their purposes are exploitative or cooperative, share a common need for being able to predict how other members will behave toward them. Out of this need for predictability come strong pressures on each member to assume certain stable relations with all other members.

These broad generalizations are undoubtedly correct, but a more detailed analysis of why specific individuals in a given group interact in specific ways is required if we are to account for the origin of any particular group structure. Some research illustrating this more "microscopic" analysis of the origin of group structure may be cited.

Several studies reveal, for example, that group members may give prestige and power to people who possess certain valued characteristics and that, after such distinctions of prestige and power have been made, those on the lower levels tend to gain satisfaction through communication with the "big shots" (see, for instance, the study of Lippitt, Polansky,



Redl, and Rosen in Chap. 31). On the basis of a laboratory experiment, Kelley (Chap. 30) proposes a general tendency for people to communicate upward in a hierarchy as a motivational substitute for actual upward locomotion into the higher positions. More extensive research, however, is revealing that such tendencies to communicate upward or downward in a hierarchy depend greatly upon the specific content of the "message" and the degree to which this content protects or threatens the relations between potential communicators. Thus, a study of the relations among professional roles (12) has found that persons of lower status are much more ready to communicate one type of content upward than are persons of higher status ready to communicate the same content downward, but the opposite trend is found for other types of content.

*The environment of the group.* It is a common observation of the leaders of children's groups that the physical environment of the group, including such things as the amount of space available for play or the type of recreational equipment, greatly influences the structure of the group. Several studies have indicated, too, that the opportunity for social contact provided by the geographical arrangement of houses affects the way friendships develop and consequently the sociometric structure of a neighborhood (4). The sociometric structure, in turn, has been shown to influence the kind of communication network that arises—people are less restrained in talking to close friends than to mere acquaintances (3). In discussion groups the physical limitations imposed by the fact that only a few people can be heard at once makes the absolute size of the group an important determinant of group structure. Finally, making available to a group certain technological facilities, such as telephones for communication or equipment for simultaneous interpretation at international conferences, may modify its structure in a fundamental way.

The social environment of a group also exerts an influence on the structure of a group. Thus, for example, the stratification of society into social-economic classes or racial groups may be reflected in the sociometric structure of a neighborhood (5). Similar influences, of course, may be seen in groups at school, church, and throughout the community.

### Formal and Informal Structures

Research and everyday experience in organizations has made it quite clear that the stable structures of groups may differ greatly in how formally they are specified. In highly formalized groups there may be detailed written statements concerning the structure. The bylaws of an organization may specify all the positions within it together with the

duties of each. Some organizations have written regulations governing who can communicate with whom. A few organizations even go so far as to ban social interactions among certain positions. To the extent that these formal, written statements of structure are taken seriously, they are known by members and enforced by organizational sanction.

In contrast to these groups with highly formalized structures, there are others which display stable structures without there ever having been any explicit description of them or any formal agreement concerning them. In Chapter 31, for example, Lippitt, Polansky, Redl, and Rosen show how boys in summer camp are in common agreement concerning which boy has the greatest power in the group, although they probably have never discussed this fact among themselves. Similarly, Mills (Chap. 29) describes how, in three-person discussion groups, different stable patterns of interaction develop without any explicit agreement. And Hare (Chap. 34) demonstrates how the size of the discussion group influences such things as tendencies to split into factions and the amount of power exerted by the leader, even though the group's adjustment to its size is seldom explicitly discussed. From all available evidence, there is yet no reason to conclude that informal structures are any less stable or less demanding upon group members than formal ones.

In many cases a formal organization may have within it, or parallel to it, an informal organization which is quite different. Thus, the members of a group may be expected to do certain things, or relate to others in certain ways, according to the *formal* organization, but may also feel quite different influences stemming from the *informal* organization. Roethlisberger and Dickson (11) provide dramatic illustrations of the conflicts created for a worker when he must decide between conforming to the pressures coming from the formal organization and those deriving from the informal one. To the degree that the worker's behavior is mainly influenced by the informal social structure, it may appear quite unexplainable to the management, who expect strict conformity to the formal structure. In our present stage of knowledge, it is not possible to assert confidently what factors determine whether a person will be more influenced by one or the other conflicting structure. In our discussion of group pressures and group standards (Chap. 11) we presented evidence, however, indicating that a group is more able to influence its members the more the members are attracted to it (i.e., perceive it as a source of satisfaction for important needs). Applied to the present problem, then, we should expect greater pressures to conform to that structure which provides greater need satisfaction. Furthermore, we ought to find that informal structures emerge more frequently in those formal organizations whose formal structures do not provide adequate opportunity for satisfying the need for recognition and friendly interaction.

### Problem of Characterizing Structures

If we are to compare the structure of one group with that of another, or if we are to study how the structure of the same group changes over time, we must develop some way of describing the characteristics of any given structure, whether it be formal or informal. In our earlier discussion we noted that a group may be structured according to different aspects or dimensions. Designating, therefore, whether the dimension under consideration has to do with power relations, communication possibilities, friendship choices, responsibility for functions, or something else, becomes the first task in describing group structure. The structure with respect to each designated dimension may then be characterized in terms of the arrangement of its parts. A description of the arrangement of the parts, or positions, of a structure consists of specifying how these positions are linked together.

Let us consider first the *communication structure* of a group. When organizations are large, their formal structure usually does not provide for direct communication from each position to every other. In a military organization, for example, one cannot communicate with the commanding officer without first talking to one's immediate superior. In governmental agencies it is quite common for direct communication with a person in another bureau to be forbidden. One must "go through channels," which means that a communication must go "upstairs" in the agency, across to the top level in the other, and then down to the person addressed. In these illustrations the communication network is imposed by general policy formulated at the top of the organization.

It is not always true that the communication structure of even formally organized groups is strictly that set by official order. Jaques (8) has noted, for instance, in his study of an English industrial organization, that communication links may "spontaneously" be limited to the transmission of only certain types of material. Thus, a supervisor may pass along only that type of "screened" information which he feels that his superior would like to hear from him. Or, he may be forced to reduce the amount he can pass along simply because there is too much to tell. In completely informal groups, quite stable communication structures may, of course, develop without any explicit agreement or external imposition.

In order to describe the communication structure of any organization in a systematic fashion, we should want to specify for each position in the structure which other positions are connected to it by a direct channel of communication. The total pattern of positions and communication links constitutes the communication structure of a group.

Once we have determined the communication structure of a group, we may locate every member in it. The locations may then be characterized

in various ways. One person, for example, may be in a central position (connected to everyone else through a relatively small number of communication links) and he will be quite likely to hear about nearly everything. Another may be in a peripheral position (removed by many communication links from several other members) and he will tend to be out of touch with things. A third may be located in the only position connecting two parts of the group and he is a potential "bottleneck" in the flow of information between the two subgroups. It can be shown, moreover, that the probability that a given item of information will reach everyone in a certain period of time varies in a definite manner with certain features of the communication structure.

The pioneering work of Moreno (9) has demonstrated the importance of determining the *sociometric structure* of a group. This structure may be treated in essentially the same fashion as the communication structure. In this description, the links among members of the group may be thought of as sociometric choices. If A chooses B as his friend, there will be said to be a link from A to B. Such groups may differ from one another considerably in the pattern of such links among the members. In one group, for example, everyone may choose (be linked to) everyone else, whereas in another there may be clusters of people linked together (cliques), with each cluster not connected to any other. Just as in the case of communication structures, each group member will have a location in the sociometric structure. One person, for instance, may be central, another peripheral or isolated, and the third may be the only person located in two cliques. It is probable that the cohesiveness and stability of a group depends upon the particular sociometric structure that it has.

Employing the same general methods, it should be possible to specify the *power structure* of a group by determining the power relations between each pair of positions in the group. Relatively little progress has been made in this direction, however, because of the complexity of the concept of *power*. One person may be able to influence (have power over) another in regard to certain matters, and be influenced by (under the power of) the same person when other matters are involved. Despite difficulties of this sort, it is possible in many situations to determine the usual, or most likely, power relation among all the positions of a group.

In treating power relations as links between positions, one will have to be concerned with *directed links*, that is to say, where the relation between A and B is not the same as that between B and A. When the positions of a group are arranged according to their power relations and when the links are directed so that  $A \rightarrow B \rightarrow C \dots$  (A has power over B who has power over C), the resulting structure is a hierarchy. The number of layers in this structure and the number of positions in each layer are important structural characteristics of any group.



It is possible to designate one other type of structure, which may be called the *locomotion structure* of a group. In determining this structure, one links positions together on the basis of whether or not a person can move his location directly from one position to the other. Many formal organizations are quite explicit in setting up paths of advancement. When a position is to be filled, only people in certain other positions are eligible for promotion. Some positions may be connected to many others while other positions are not. Similarly, one position may lie on the path to a desirable "top position" while another may be in a "blind alley." It should be clear that these structural features will greatly influence the attractiveness of different positions to group members and the morale of the total organization.

Little systematic work has yet been done to specify the formal properties of the various patterns of linkage that may exist, or to study the consequences for group functioning that flow from different patterns. An important step in this direction has been taken, however, by Bavelas in the work reported in Chapter 33. He has shown (2) that certain structural characteristics of groups can be given rigorous definition in formal mathematical terms, and that these characteristics can be manipulated experimentally under controlled laboratory conditions. Harary and Norman (6) have recently shown that the branch of mathematics known as *graph theory* provides an appropriate basis for describing structural properties of groups in a mathematically rigorous fashion. Rapid progress may now be expected in the utilization of this branch of mathematics in solving problems of group structure.

### Consequences of Different Locations in a Structure

From the point of view of the individual member, his location in the structure of the group is of decisive importance. In the first place it should be noted that all positions are not equally attractive to him. Positions of greater power may be more attractive, or he may desire to be more centrally located in the communication structure. The differential attractiveness of positions sets up forces on the member to change his location in the relevant structure. Much of his behavior in the group will then be governed by this desire for mobility (or by efforts to maintain a desirable position which he has). These driving forces may, however, be opposed by restraining forces—the member may be barred from a position because of his inexperience, racial origin, sex, or other personal characteristics. The degree of satisfaction that a person derives from his location in a position, and the degree of frustration of his desire to change positions, will obviously influence his morale, productivity, and mental health.

There are many different consequences for the individual of being located in different positions in the various structures listed above. A person's location in the communication structure determines to whom he may talk, from whom he may receive information, and what information he will possess. Peripheral members may tend to construct autistic views about matters concerning which they receive little communication. If their peripheral position also produces hostility, these views may be quite antagonistic to the organization. The fact that people in different positions will possess different information increases the probability that conflicts and misunderstanding will arise among the occupants of the different positions.

How well an individual can satisfy his needs for acceptance and affection will depend upon his location in the group's sociometric structure. Jackson (7) has shown, for example, that being valued (i.e., being chosen) by other members of a group increases markedly one's attraction to that group and one's satisfaction with membership in it. The tendency for sociometrically peripheral members to leave the group when it encounters difficulties has been demonstrated experimentally by Thibaut (Chap. 9). And French (Chap. 35) has evidence that sociometrically low status people are more likely than others to become ill or to display disciplinary problems, although it is not possible from the available data to state which is cause and which effect in this relationship. It may be that those who become ill are underchosen because of a predisposition to become ill. It seems quite likely, however, that the fact of being underchosen also leads to greater maladjustment and thus to sickness. Much more research is needed before phenomena of this sort are fully understood, but the importance of sociometric position for the satisfaction of important individual needs can hardly be doubted.

A member's location in the power structure will determine what he can do, his space of free movement, how autonomous he can be, and whether he is vulnerable to arbitrary control by others. If his position places him under the power of others, his security may be threatened and he may attempt in various ways to placate the potentially dangerous power figure. Hurwitz, Zander, and Hymovitch (Chap. 32) and Pepitone (10) have shown that people display tendencies to distort their perceptions so as to exaggerate the benevolence of powerful people and thus to make the environment appear safer. Lippitt, Polansky, Redl, and Rosen (Chap. 31) have also shown that children behave toward other more powerful children in a deferential manner. Many other motivational consequences of a person's position in the power structure could be noted. In conclusion, scattered evidence in the literature may be interpreted to indicate that, when the power of a member's position does

not allow him to participate in the setting of group goals, he will probably not be so involved in working toward their achievement.

### Overview of Research Reported in This Section

The seven chapters which follow in this section examine, in a variety of settings and with many different techniques of research, some of the major phenomena related to group structure.

In Chapter 29 Mills attempts to identify a few of the conditions which lead to the development of a stable structure in very small groups. By studying the interactions among members of three-person groups, he is able to conclude that when the strong members of a trio form a mutually supportive pair, the third person is firmly excluded, and a stable social structure develops. If, however, the two stronger members are in conflict with each other, no stable structure occurs, and the third member is not excluded. Mills also describes some of the ways in which interaction varies depending upon the members' social positions on various dimensions.

Kelley reports in Chapter 30 an experiment in which two different levels of prestige and power were created in laboratory groups. In half of the groups, both low and high status groups, the subjects were informed that their status was firm and that they would not be moved out of it (non-mobile groups). The remaining half of the groups were told that they might be shifted from their present status to that of the other (mobile groups). Kelley concludes that the more unpleasant a position is for a person (i.e., when a person is in a high status position but may be moved downward or when he is in a low status position without the possibility of upward locomotion), the more likely will he be to talk about things that are irrelevant to the task at hand. He also cites evidence in support of the view that communication in a hierarchy may serve as a sort of substitution for actual locomotion to the higher status position. Finally, he shows how the communications of both high and low status people are shaped so as not to endanger the maintaining (or achieving) of a high status position.

A study of the interpersonal relations and interactions among adolescents in summer camps is reported by Lippitt, Polansky, Redl, and Rosen in Chapter 31. This study shows that those children who have the most power to influence the others when they want to do so are also more likely to have their behavior imitated by others even when they make no overt attempt to bring this about. It also describes the different ways in which those with more and those with less power behave in their interactions with others. Finally, the study reveals several of the characteristics which appear to give power to the more influential children.

The effects of power on interaction within a group are demonstrated further in a study by Hurwitz, Zander, and Hymovitch, reported in Chapter 32. The findings of this investigation reveal some of the consequences stemming from the insecurity experienced by people in positions of relatively little power. Thus, it is found that those with more power feel freer to participate in a conference attended by people with different degrees of power. When those with little power do participate, they direct their communications more to those with greater power. Moreover, those with little power tend to perceive that they are liked by those with greater power more than the situation justifies. Thus, it appears that the relatively less secure people (those with less power) attempt to reduce the threat inherent in the situation both through their behavior and through distorting their perceptions of the more powerful people.

Quite a different aspect of group structure is examined in Chapter 33, in which Bavelas reports experiments dealing with communication networks. In these experiments different structures are established by experimental instructions and then compared in terms of their resulting efficiency. It is found that groups operating with certain communication structures excel others in speed and accuracy in problem solving. It is also established that certain structures tend to concentrate the flow of communication through a few central positions and that the occupants of these positions tend to become the leaders of the group. Also, occupants of the more peripheral positions usually show less satisfaction with the job done and less zeal in working on the task than do those in the more central positions.

That the size of a discussion group influences its structure and the nature of interaction is shown by Hare in Chapter 34. He compares the nature of interaction in groups composed of 5 persons and those composed of 12. He finds that in the larger groups there is less opportunity for members to participate and that members are less satisfied with the meetings. In the larger groups the members also require a longer time to reach consensus, are more likely to break into conflicting groups, and feel that their opinions are not important. It would seem probable, although there is no experimental evidence directly on the point, that if there were a specialization of functions in the larger groups, so that there were fewer positions with several people in each position, these negative reactions might be reduced.

Finally, in Chapter 35 French describes a study of sociometric relations at a Naval Training station. He proposes that the sociometric structure of a group is influenced by personality characteristics of the members, by their overt behavior, and by the values of the group. He shows further that when the men are asked to indicate their choices for companions in social activities, a rather different structure is found from that discovered



when the men are asked to make choices for leadership. Although the evidence is not conclusive, the data suggests that those men who occupy peripheral positions in the resulting choice structure thereby become more maladjusted.

## REFERENCES

1. Barnard, C. I. Functions and pathology of status systems in informal organizations. In Whyte, W. F. (Ed.), *Industry and society*. New York: McGraw-Hill, 1946.
2. Bavelas, A. A mathematical model for group structures. *Applied Anthropology*, 1948, 7, No. 3, 16-30.
3. Festinger, L., Cartwright, D., et al. A study of a rumor: Its origin and spread. *Human Relations*, 1947, 1, 464-486.
4. Festinger, L., Schachter, S., & Back, K. *Social pressures in informal groups*. New York: Harper, 1950.
5. Form, W. H. Stratification in low and middle income housing areas. *Journal of Social Issues*, 1951, 7, No. 1, 109-131.
6. Harary, F., & Norman, R. Z. *Graph theory as a mathematical model in social science*. Ann Arbor, Mich.: Institute for Social Research, 1953.
7. Jackson, J. Analysis of interpersonal relations in a formal organization. Unpublished doctor's dissertation, Univ. of Michigan, 1952.
8. Jaques, E., *The changing culture of a factory*. London: Tavistock Publications, 1951.
9. Moreno, J. L. *Who shall survive?* Washington: Nervous and Mental Disease Publishing Co., 1934.
10. Pepitone, A. Motivational effects in social perception. *Human Relations*, 1950, 3, 57-76.
11. Roethlisberger, F. J., & Dickson, W. J. *Management and the worker*. Cambridge: Harvard Univ. Press, 1939.
12. Zander, A., Cohen, A., Hymovitch, B., & Stotland, E. *Some determinants of role relations*. (Mimeo.) Ann Arbor, Mich.: Institute for Social Research, 1952.

## Power Relations in Three-Person Groups

Theodore M. Mills

In drawing his fundamental distinction between two-person groups and all groups of larger size, Simmel (3) called attention to certain characteristics of the three-person situation. It was important to him the way the position of the third person impinged upon the other two, whether this position be as mediator, as holder of the balance of power, or as constant disturber of the solidarity enjoyed by the other two. He described how a conflict between two can bring satisfaction and strength to a third, and how the sense of unity within a pair could be threatened by the mere presence of another person.

More recently, and on quite another plane, Von Neumann and Morgenstern (4) have made an important contribution by making room, in their theory, for the three-person game and, in their solution, by allowing for a coalition, or an alliance, between two parties to the game. Their theoretical model has a place within it for the coalition, whether it be collusion in the market place, a strong emotional tie, or simply a gentleman's agreement.

It is in this respect, despite wide differences in approach, that Simmel and Von Neumann and Morgenstern share common ground. They either assume or recognize that the most elementary differentiating tendency is or may be for the threesome to segregate into a *pair* and an *other*.

Whether or not this segregation generally occurs and just what position the third party *does* take (or is given) in the face of conflict or alliance between the others are empirical questions. They are precisely the sort of questions that are easier to investigate now than they were before recent developments in the observation of behavior in small groups.

Somewhat generalized, Simmel's observations define the first major

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question of this paper: namely, to what extent and under what conditions are the three relationships interdependent? Does the fact that one is of a certain kind, whatever the kind, determine in any appreciable degree the nature of the other relationships? This first leads quite naturally to a second major problem: when is it found, empirically, that interdependence develops into a sharply differentiated and rigidly set power structure, and when, empirically, is it found that the relations remain in a constant state of fluctuation?

Let me introduce the results of a study of these problems in the small groups laboratory by briefly describing the procedures followed in collecting and ordering the data.

## Procedures

### *Observation Setting*

The data consist of observations made of interaction in 48 three-person discussion sessions. Subjects were student volunteers, recruited through Harvard Student Employment Service. Groups were assembled in a room equipped with a one-way screen and an adjacent observation room. Subjects had not previously interacted with one another, and there were no obvious status differences between them. A group performed in two sessions, each lasting about thirty minutes.

Each group was asked to create, from three pictures selected from the TAT series, a single dramatic story upon which all agreed. In the experimental setting there was a minimum of restraints; no limit was placed upon the kind of story, or its content, or upon what member should play what role in its telling.

### *Collection of Data*

Each act was scored in sequence according to Bales's method of interaction process analysis (1). This score shows, first, who initiates the act and to whom it is directed. In addition, it indicates the relevance of the act either to the solution of the problem confronting the group or to the state of integration of the group. Acts classified as relevant primarily to the group problem (categories four through nine) are for present purposes combined and called "contributions." Positive acts (categories one through three) directed specifically to others in the group are called acts of "support." Negative acts (categories ten through twelve) directed specifically to others are called acts of "nonsupport." In this manner interaction is divided into items offered to the group's solution and into positive or negative responses to what is offered.

A summary tabulation of scores for the entire discussion provides two important sets of data: first, the relative number of contributions made by each member; and, second, the exchange of supportive and non-supportive responses from each member to each other member.

### Ordering the Data

These data are ordered in a matrix illustrated in Table 29.1. The member in the group who is highest in contributions is assigned, as

TABLE 29.1

ILLUSTRATION OF MATRIX, SHOWING RATES OF SUPPORT ACCORDING TO RANK ORDER OF CONTRIBUTIONS  
(Experimental Group No. 40; Total acts: 493)

AS INITIATOR	AS RECIPIENT			RATE OF TOTAL SUPPORT OUTPUT
	Most Active	Medium Active	Least Active	
Most active		22.1	3.2	15.0
Medium active	24.2		11.1	20.9
Least active	.5	1.0		.8
Rate of total support rec'd.	24.8	23.0	14.3	

initiator, to the first row of the matrix, and, as recipient, to the first column. Others are assigned to succeeding rows and columns according to the rank order of their contributions. Within matrix cells are placed the rates of support between members. In the tabulation, the rate from the most active member to the medium active member is 22.1, and this may be taken to read roughly that the former overtly supports 22% of the latter's contributions.<sup>1</sup> The rate in the adjacent cell indicates that the most active member supports around 3% of the least active member's contributions.

Rates of total support *output* are recorded to the right of the matrix; rates of total support *intake*, below the matrix. The base for calculating *output* is the combined contributions of all members other than the initiator in question.

<sup>1</sup> More precisely, the rates indicate the *preponderance* of supportive versus non-supportive acts, for the calculation of the rate of support takes into account both classes of acts. Support is assumed to range from positive (where supportive acts outnumber non-supportive) through zero (where supportive and non-supportive acts are equal) to negative (where non-supportive outnumber supportive acts). Details in the calculation of rates to specific persons in the group, and of total output and intake rates, are given in the following formulae:



These procedures result in a standardized matrix presenting two components that are taken together as a first approximation to the definition of the power position of a member: first, the relative number of contributions; and second, the relative frequency of support others give to the author of these contributions. It is inferred, in other words, that a high rate of participation coupled with high support intake means that a member is in a relatively strong position; and that low participation coupled with a low rate of support means that he is in a relatively weak position.

Moreover, for any pair of members, the magnitude of the rates of support are taken as manifestations of the nature of the relationship existing within that pair. Thus, when two members exchange support at a high rate, the relationship is called a *solidary* one, or an *alliance*; whereas, when the exchange is at a very low rate the relationship is called *hostile*, or the pair are said to be in *conflict*. In the group illustrated, it may be said, tentatively at least, that the two more active members are in alliance; the most and the least in conflict; and the medium and least active in an unbalanced, nonreciprocal relationship. The most active member is in the strongest power position, and the least active is in the weakest.

A matrix, like the one given above, is calculated for each session, and these matrices form the base for further steps in ordering the data. In the discussion of central tendencies in the following section, they are com-

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1. The rate at which member 1 supports member 2 ( $RS_{12}$ ), for example, is given by the equation

$$RS_{12} = 100 \frac{A_{12} - D_{12}}{B_2 + C_2},$$

where  $A_{12}$  refers to the frequency of supportive acts initiated by member 1 and directed to member 2.  $D_{12}$  refers to the frequency of nonsupportive acts initiated by member 1 and directed to member 2, and  $B_2$  and  $C_2$  combined refer to the frequency of "contributions" (as defined above in the text) initiated by member 2 regardless of the recipients of the acts.

2. The rate of total support output of member 1 ( $RTSO_1$ ) is given by the following equation:

$$RTSO_1 = 100 \frac{(A_{12} + A_{13} + \dots A_{1n}) - (D_{12} + D_{13} + \dots D_{1n})}{(B_2 + B_3 + \dots B_n) + (C_2 + C_3 + \dots C_n)},$$

where the letter symbols have the same meaning in respect to classes of acts as in the equation above, and where the subscripts, as above, indicate the initiator and the recipient in that order. A single subscript indicates that all initiations, regardless of recipient, are included.

3. The rate of total support intake of member 1 ( $RTSI_1$ ) is given by the following equation:

$$RTSI_1 = 100 \frac{(A_{21} + A_{31} + \dots A_{n1}) - (D_{21} + D_{31} + \dots D_{n1})}{B_1 + C_1},$$

where letter symbols and subscripts have the same reference as in the above equations. Note that the use of the letters corresponds to Bales' designation (1, 9).

bined into a "median matrix," and later on they are split into time segments to show trends from the beginning to the end of the sessions.

## Findings

### *Central Tendencies in Exchange of Support*

Taking the example of 48 sessions as a whole, what evidence is there to confirm or to refute Simmel's observation that the elementary differentiating tendency is for the threesome to segregate into a pair and a third party? In order to represent the central tendencies in a simple manner, a median matrix is constructed as follows: rates for all cases in any one cell of the matrix (for example, the cell from the most active to the medium active) are taken to form a single distribution, rates in another cell another distribution, so that for exchange and total rates there are a total of 12 distributions, each with 48 cases. The medians of these distributions are recorded in a single matrix and shown in Table 29.2.

TABLE 29.2

MEDIAN RATES OF SUPPORT ACCORDING TO RANK ORDER OF CONTRIBUTIONS OF MEMBERS  
( $n = 48$  cases)

AS INITIATOR	AS RECIPIENT			RATE OF TOTAL SUPPORT OUTPUT
	Most Active	Medium Active	Least Active	
Most active		12.0	7.0	9.7
Medium active	11.1		3.8	8.9
Least active	4.0	2.5		3.5
Rate of total support intake	15.2	15.0	12.4	

Total rates indicate little of major importance to the present discussion. However, what is instructive is the distribution of support between members and this is shown by rates within the matrix.

The highest rates of support are those exchanged between the two more active members and the rates are very nearly the same. Moreover, the frequency distributions, represented here only by the medians, are almost identical in every respect. All other distributions of rates are significantly different from these two. This is to say that, as far as exchange of support is concerned, the relationship between these two members is sharply differentiated from the other relationships. The results for this sample confirm Simmel's observation. The two more active members form the pair and the least active member is the relatively isolated third party.

### *Interdependence of Relationships*

Having taken into account the central tendencies, we are in a position to ask the extent to which individual groups adhere to or deviate from these tendencies and, for any given group, the extent to which the direction of deviation of one relationship is associated with deviations of the other relationships.

Special attention should be called to the fact that deviation is considered not from a median for the specific group, but from the medians for the entire sample; so that there is no technical reason why all rates in a given group may not be above the sample medians, and no reason why all rates might not be below them.

The four possible combinations of deviations within a pair of members are classified as follows:

1. When both parties are above their respective medians in the support of one another, the relationship is called *solidary*.
2. When both parties are below, the relationship is called *conflicting*.
3. When the more active is below and the lesser active above, it is called *dominant*.
4. And, finally, when the more active is above and the lesser active below, the relationship is called *contending*.

The pair of members found above to be singly important in the initial segregation of the group is held constant. Each group, then, is sorted into one of four classes according to whether the type of relationship in the strongest pair is solidary, conflicting, dominant, or contending. Other rates are tested for association. Though in the subsequent tables results are presented for all four types of patterns, in the interest of brevity comments are restricted to the contrasting patterns, the solidary and the conflicting. The former represents radical accentuation of the central tendencies; the latter, reversal of these tendencies.

In Table 29.3 are given four matrices corresponding to the four patterns of relationships in the strongest pair, and within appropriate cells are reported chi-square values of deviations in the remaining relationships. A plus or minus sign indicates the modal direction of deviation from the sample median. The mean rates of support for these relationships are given in Table 29.4.

What effect upon the third party has an alliance between the other two? Results in the first matrix show that there is strict and rigid determination of his position. There is assurance at beyond .05 level that he will oppose both parties to the alliance without discrimination between them. There is assurance that the medium member will, in turn, reject him. Furthermore, there is some assurance, though not statistically significant, that the most active member will also reject him. As shown

TABLE 29.3

ASSOCIATION BETWEEN SUPPORT IN THE STRONGEST PAIR AND SUPPORT IN OTHER RELATIONSHIPS

TYPE OF PATTERN	RANK AS INITIATOR	CONTRIBUTIONS TO $\chi^2$ OF DEVIATIONS OF RATES OF SUPPORT REGARDING THE THIRD MAN MEMBERS AS RECIPIENTS		
		Most Active	Medium Active	Least Active
Solidary $n = 15$	Most active	...	(+)	(-) 2.28
	Medium active	(+)	...	(-) 4.44 *
	Least active	(-) 4.44 *	(-) 4.44 *	...
Conflict $n = 13$	Most active	...	(-)	(±) 0.0
	Medium active	(-)	...	(+) 1.0
	Least active	(+) 1.0	(+) 1.0	...
Dominant $n = 11$	Most active	...	(-)	(+) 1.14
	Medium active	(+)	...	(+) 0.14
	Least active	(-) 0.14	(-) 1.28	...
Contending $n = 9$	Most active	...	(+)	(+) 1.28
	Medium active	(-)	...	(-) 0.67
	Least active	(+) 3.56 †	(+) 3.56 †	...

\*  $P(\chi^2/df_1 \geq 4.44) < .05$ †  $P(\chi^2/df_1 \geq 3.56) = .07$ 

in Table 29.4, compared to other types of patterns, both his intake and output of support are lower in this than in any other pattern. Therefore, what is determined when there is an alliance is a state of opposition between the alliance and the third party.

Not only is this determined position of the third party as weak as a power position can be, but it is likely that power interests involved in it are inversely related to the interests of the other members. The stronger the coalition, the weaker the position of the third man, and vice versa. This means that the interdependency extends through the entire group, resulting in a fully differentiated and determined set of relationships.

In its ideal form this set, composed of one positive and two negative reciprocal relationships, is termed the *true coalition*.

An alliance in the strongest pair threatens the third member. Does a conflict there bring him gratification and rewards, as Simmel suggests sometimes occurs? Chi-square values in the second matrix in Table 29.3 show that in this case there is almost complete lack of determination in



respect to the position of the third party. Apparently he is under no systematic pressures in his support of or opposition to the others, and others are under no systematic pressures in respect to him. Conditions seem to be fluid enough from group to group to permit random fluctuations above and below the respective sample medians. Anything may happen between parties to the conflict and the other member, the only tendency that may exist is the continuation of the conflict.

TABLE 29.4

MEAN RATE OF SUPPORT TO AND FROM THE THIRD MAN, BY SUPPORT PATTERN IN THE STRONGEST PAIR

TYPE OF PATTERN	INITIATOR	RECIPIENT	RATE OF SUPPORT	MEAN TOTAL RATE	
				Intake	Output
Solidary	Most active	Least active	4.33	6.57	0.97
	Medium active	Least active	2.24		
	Least active	Most active	0.40		
	Least active	Medium active	0.82		
Conflict	Most active	Least active	10.13	15.17	5.37
	Medium active	Least active	5.06		
	Least active	Most active	5.45		
	Least active	Medium active	5.37		
Dominant	Most active	Least active	8.21	13.64	1.51
	Medium active	Least active	3.80		
	Least active	Most active	2.90		
	Least active	Medium active	0.28		
Contending	Most active	Least active	13.58	16.10	6.84
	Medium active	Least active	2.73		
	Least active	Most active	8.27		
	Least active	Medium active	4.77		

The position of the third party in this pattern compares favorably with his isolation in the *coalition* pattern, but the significant point shown by the mean rates of support in Table 29.4 is that he fares no better when there is conflict between the others than third men generally do. This indicates that Simmel's example of *tertius gaudens* is an unusual instance rather than a general rule in the three-person interaction situation.

In summary, under the set of conditions where the initial differentiating tendency to segregate into a pair and an other becomes developed radically into an unusually solidary bond, there results unequivocal inter-determinancy of the other relationships; whereas, when this initial tendency is reversed, there is independence among and fluctuation of the other relationships.

These results, therefore, offer a tentative answer to the first major problem, namely, the conditions under which there is or is not inter-dependence between the three relationships. And they offer a hint in regard to the second major problem, whether or not full-fledged power structures exist. However, before it can be said that a genuine structure has been isolated, it is necessary to carry the analysis a few steps further, for up to now it has been assumed that both the distribution of participation and the support rates themselves remain constant throughout the session. It has been assumed, in other words, that summary figures accurately reflect the state of affairs through all phases of the discussion. These assumptions are tested in the following analysis of temporal trends.

### *Temporal Trends*

Power patterns are made up of combinations of power positions. A power structure is composed of stable positions. The presentation of the evidence for the existence of structures deals, first, with temporal trends for specific positions within patterns and concludes with shifts of patterns themselves from one type to another.

*Positions.* As stated above, power position is defined by two components; the first is the relative frequency of contributions to the solution of the group's problem, and the second is the amount of positive support received by a member from others in the group. By a stable position is meant one where these two components remain constant relative to other positions from the beginning to the end of the discussion period. Stability is tested for all positions in the four types of patterns.

Turnover in rank order of contributions initiated is given in Table 29.5. Rank in the first phase is recorded along the rows; rank in the third down the columns. Stable positions are, therefore, along the main diagonal.

Results show that in the *solidary* pattern nonshifts are more frequent than expected by chance alone. A level of initiation once attained tends to remain constant. In respect to this component in this pattern, power positions are stable.

In the *conflict* pattern, on the other hand, results show that nonshifts could be attributed to chance alone. There is no assurance whatever of maintaining a given level of initiation. No one member stays in the lead

for any appreciable period of time. In this pattern, power positions are unstable through time.

TABLE 29.5

TURNOVER IN RANK ORDER OF CONTRIBUTIONS INITIATED BY TYPE OF PATTERN

Type of Pattern	Rank in First Phase	Rank in Third Phase			Probability of Observed Number of Nonshifts
		1	2	3	
Solidary	1	13	2	..	$p(NS \geq 34) < .01$
	2	1	10	4	
	3	1	3	11	
Conflict	1	7	4	2	$p(NS \geq 18) > .05$
	2	5	4	4	
	3	1	5	7	
Dominant	1	9	2	..	$p(NS \geq 20) < .05$
	2	1	5	5	
	3	1	4	6	
Contending	1	7	1	1	$p(NS \geq 16) < .05$
	2	2	4	3	
	3	..	4	5	

NOTE.—The probability model, derived from the one used for the matching problem by Robert R. Bush and C. Frederick Mosteller, is as follows:

$$NS = \text{mean number of nonshifts in rank order} = np$$

$$\sigma^2 NS = npq \frac{n}{n-1}$$

$$p = \frac{1}{R}, \quad q = \frac{R-1}{R}$$

Where:

$NS$  = number of nonshifts in rank order

$R$  = number of ranks

$n$  = total number of subjects in all groups of any given pattern

It is worth noting in passing that in the other two patterns, the *dominant* and the *contending*, the position of the most active member is stable while the positions of the others fluctuate.

In summary, there is one pattern where all positions are stable; there is another where all positions are unstable; and in the others, the strongest position is stable while the others fluctuate. The significantly stable pattern is the *solidary* one, which, as we have seen, tends to develop into

the fully differentiated, interdependent pattern called the *true coalition*. The significantly unstable one is the *conflict* pattern which is notable for its lack of interdetermination.

In respect to the second component in the definition of power position, the amount of support received, stability is measured in terms of gain or loss from the first to the final phase of the session. These gains and losses are presented in Table 29.6. Loss is indicated by a negative sign.

In the *solidary* pattern there occur radical shifts through time. The two more active members gain while the least active loses. For all mem-

TABLE 29.6

TEMPORAL GAIN, OR LOSS, IN SUPPORT, BY RANK IN CONTRIBUTIONS INITIATED AND BY TYPE OF PATTERN

TYPE OF PATTERN	AVERAGE NET GAIN		
	Most Active	Medium Active	Least Active
Solidary	+9.3	+14.0	- 9.3
Conflict	-1.5	- 3.8	+ 1.8
Dominant	+8.0	-11.6	-16.1
Contending	+4.5	- 1.3	- 2.2

bers there is change. However, this should not be interpreted as a state of instability, for the trends represent neither fluctuation nor reversal, but rather an accentuation of the relations existing at the beginning of the session. The results show clearly that the coalition, once it is formed, grows stronger and the third man weaker.

The *conflict* pattern again contrasts with this picture, for there is little or no change in the rates of support through time. The characteristically low rate of support between members remains low. No one gains and there is not much for anyone to lose.

In summary, for the *coalition* pattern it may be said, first, that positions as contributors remain stable, and second, that gains and losses amount to an unbroken intensification of the initial segregation into a pair and an other. A member within the coalition becomes stronger; the third member becomes weaker. In the *conflict* pattern fluctuation in participation combines with a constant low rate of support between members. Members to the conflict change, but the conflict is perpetuated.

Up to the present point in the analysis there is one pattern--the *solidary* or *coalition* pattern--that possesses the two characteristics of a genuine power structure, that is, internal differentiation and steady trends through time that coincide with this differentiation. The final test for a structure deals with shifts from one power pattern to other patterns.



*Patterns.* Those patterns that maintain themselves through the session and those toward which others shift are assumed to be stable, while those that rapidly dissolve and toward which no others shift are assumed to be unstable. Table 29.7 gives along the rows the type of pattern in the strongest pair for the first phase and down the columns the type of pattern for the final phase. Within the table are frequencies of shifts and nonshifts.

TABLE 29.7

## TEMPORAL SHIFTS IN SUPPORT PATTERNS

SUPPORT PATTERN FIRST PHASE	SUPPORT PATTERN THIRD PHASE				TOTAL
	Solidary	Conflict	Dominant	Contend- ing	
Solidary	10 *	1	1	1	13
Conflict	5	8	3	3	19
Dominant	1	5 **	1	..	7
Contending	2	4	2	1	9
Total	18	18	7	5	48

\*  $\rho(\chi^2/f_1 \geq 15.9) < .01$

\*\*  $\rho(\chi^2/f_1 \geq 8.41) < .05$

The point of central importance to the present problem is the significant tendency for the *solidary* pattern to remain without change. Only three of 13 cases shift to other patterns, and eight cases shift to it. Not only is the *coalition* pattern self-perpetuating but other patterns dissolve into it. These results, combined with the findings reported above, are taken as confirmation of the proposition that the *coalition* pattern is a genuine power structure. Possibly it is a structure that reflects fundamental dynamic forces in the three-person situation.

The second point of importance is that nonreciprocal patterns tend to shift to the *conflict* pattern. The strongest tendency is in the *dominant* pattern. Finally, it should be noted that there is some tendency for stability in the *conflict* pattern, but that this is counteracted somewhat by a tendency for it to shift to its radically different pattern, the *solidary* one.

### Summary

Findings in this section may be summarized in terms of a general classification of power patterns in groups. *Transient patterns* are those, internally differentiated or not, that shift to some other pattern. The *dominance* and the *contending* patterns are examples. *Terminal patterns* are those, differentiated or not, toward which others shift. The *solidary* and the *conflict* patterns are cases in point. Finally, *terminal structures* are those, possessing sharp internal differentiation, that maintain themselves through time and toward which others shift. The single case found empirically to fulfill these conditions is the *coalition* structure.

Insofar as they represent divergent poles toward which groups may develop, the two terminal patterns are important ones emerging from the study. In one direction power relations are structured and there is a steady maximization of the predictability of how members will act toward one another. In the other direction, there is maximization of uncertainty—uncertainty as to who will lead and who will follow. In one direction there is differentiation, stability, predictability; in the other, lack of clear form, rapid fluctuation, unpredictability. The central relationship in one is positive, in the other, negative. Empirically, it is found that about as many groups go in one direction as in the other.

### Discussion

It has already been said that the findings confirm Simmel's basic point that the threesome tends to break up into a pair and a third party. However, they do more than this; they enable us to add several important points to his discussion. First, in his analysis of the dyad, Simmel was struck by the possibility of a sense of complete solidarity between the members, and, in progressing to the next larger size group, he assumed, in effect, the existence of this bond. Quite understandably, the added member became important primarily as an intruder or the disturber of this solidarity. It is possible, but hardly necessary, that fear of the third party accounts for the coalition formation, but, in any case, it seems plausible that once formed the coalition's intensity increases simply because there is a common object of opposition for each member of it. The third party, as scapegoat, as common enemy, or whatever he might be called, may serve to cement the coalition as much as he threatens it.

The second point is in reference to the case of *tertius gaudens* which Simmel presents as a particular set of circumstances where conflict between two members results in benefit to the third (3, 154-162). From the above observations, it is found that though this may have occurred in one or two groups it is not a general tendency. However, the principle does

seem involved in the case of the genuine power structure, the true coalition structure. As just stated, there is apparently a secondary gain for the coalition when one member of it opposes the third party. But note that this gain depends directly upon the existence of the coalition, for without it the pattern develops into conflict and fluctuation of positions associated with conflict. This suggests that the principle of *tertius gaudens* can better be seen as an important dynamic aspect of the true coalition structure than as a principle underlying a type of structure all its own.

In view of these points, two simple propositions are suggested as additions to Simmel's principle of initial segregation:

1. The development most threatening to the position of any member in the threesome is the solidarity between the other two.

2. The condition most conducive to the intensification of a solidary bond, once formed, is the presence of a common object of opposition.

Another major point of Simmel's may be paraphrased to the effect that the three person group is inherently unstable (3, 135-136). If by unstable, he meant absence of a set of determinate, constant relationships, i.e., absence of a power structure, the findings are a clear contradiction of his position. If, on the other hand, he meant that in spite of a structure there are always residual strains, the question remains quite open. There may be a basic incompatibility of interests and gratifications, but to contend from this that residual tensions within members will result in a change in group structure is to assume a less rigid structure than shown by the data. Specification of the conditions under which residual tensions within members do result in a change in group structure is an important problem for further research.

Before they are of general use, these propositions need further test. In fact, a rather long road of research seems required in order to determine to just what extent the above findings may be generalized either to other laboratory groups or, more important, to groups in less artificial settings, such as the family, the mediation situation, the tripartite board, the play group, or the therapy group. Not all groups of three are like the ones in this sample, and not all groups of similar composition operate under the same sets of conditions. Meaningful generalizations can be made only after the significant conditions are taken into account. No attempt is made here to carry out this task, even if it could be done with the present knowledge of groups. Instead, I should like to list some of the conditions surrounding the groups in this sample and conclude by posing several questions that should be answered in extrapolating to other three-person situations.

To mention some of the more important and obvious conditions: (a) the groups were *short-lived*—none lasted longer than two hours; (b) they were of *unusual composition*—all subjects were adult males, within a

narrow age range, from a single and immediate academic community, and all were in need of part-time work; (c) the groups were of *unknown composition*—particularly in respect to personalities and admixtures of these in given groups; (d) the groups' *internal, functional organization was amorphous*; (e) they worked on *one task* and it was an unusual one; (f) while being observed they were kept *immune from all external influences and pressures*, other than those they brought with them; and, finally, (g) *their performance was divorced from all reward and from all disapproval from outside the group*.

The list might be extended, but suffice to say that, unless other groups duplicate these conditions, any extension of the findings requires an investigation of the differences in conditions and the role of these differences in accentuating or counteracting the tendencies observed for this sample. We must ask: (a) In spite of the differences in conditions, do the findings hold? (b) If not, what factors in the new setting account for the negative result? An example in respect to the present findings might be the family where coalitions are commonplace but intensive and continued rejection is rare. What factors not present in the laboratory groups account for this fact? For another example, it is clear that mediation collapses if coalitions do form. Is the hypothesis irrelevant in this case, or are there special provisions that insure a check against "normal" tendencies in the three-party situation? Once these variables are specified, one may in turn ask a final question: (c) How may these variables that either intensify or negate originally observed tendencies be introduced into the group setting in the laboratory so that their weight may be measured?

#### REFERENCES

1. Bales, R. F. *Interaction process analysis*. Cambridge, Mass.: Addison-Wesley, 1950.
2. Bush, R., & Mosteller, F. Selected quantitative techniques. In G. Lindzey (Ed.), *Handbook of social psychology*. Cambridge, Mass.: Addison-Wesley (in press).
3. Simmel, G. *The sociology of . . .* K. H. Wolff. (Trans.). Glencoe, Ill.: The Free Press, 1950.
4. Von Neumann, J., & Morgenstern, O. *Theory of games and economic behavior*. Princeton: Princeton Univ. Press, 1944.



## Communication in Experimentally Created Hierarchies

Harold H. Kelley

Only recently have there been systematic investigations of the factors determining the initiation, content, and direction of communications within small face-to-face groups. As an extension of one rather intensive program of research in this area (4), the present study was executed to explore communication phenomena in experimental groups differentiated into high-status and low-status<sup>1</sup> subgroups.

The importance of research on the problem of status differentiation lies primarily in the numerical predominance in our culture of hierarchic groups over undifferentiated ones. Certainly, for our generalizations about communication processes to be of much practical value, they must extend to groups differentiated in many distinct ways. Of theoretical significance is the fact that, in dealing with hierarchic groups, we are forced to integrate a number of basic group psychological concepts: power, valence of position, group structure, and locomotion within the group.

Two prior investigations suggest some tentative hypotheses about communication within hierarchies. In the first of these, Thibaut established high and low status levels by favoring the Highs and discriminating against the Lows (6). He studied the effects of this treatment upon sociometric choices and communication between levels. We shall later discuss some of his findings regarding cohesiveness, and compare them with our own. As the discrimination in favor of the high status subgroups proceeded, the Lows increased in the total amount of communication addressed to the Highs, but decreased in the proportion which was

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<sup>1</sup> In our use of the concept "status" we shall not attempt to depart from, or to purify, its present meanings. We use it to refer to the combined valence, power, and prestige properties of a subpart of a group. A high-status position is one which affords to the occupant a pattern of activities, roles, privileges, duties, and powers which, by comparison with similar patterns for other positions, are generally deemed to be more desirable and satisfying.

aggressively toned. One explanation advanced for these trends was that the upward communication served as a substitute for blocked upward locomotion. As the possibility of actually locomoting upward decreases, it is supposed that low-status persons increasingly resort to communication to high-level persons as a substitutive means of satisfying their locomotion desires.

The second relevant study involved an analysis of the direction, whether upward or downward, in which planted rumors were transmitted within an existing hierarchic organization (1). Although tentative, the general findings pointed toward the existence of unusual forces to communicate upward, these again being thought to indicate the substitute value of communication for locomotion. There were also indications of strong restraining forces acting against free communication of specific kinds of content such as, for example, information critical of persons at the upper levels.

The general kinds of hypotheses indicated by these studies formed the broad theoretical locus for the present study. Our purpose was to determine some of the driving and restraining forces which act upon various communication content in a group by virtue of that group being structured as a status hierarchy.

### Description of the Experiment

Our method was to analyze the communication output of group members in high- and low-status positions, with and without the possibilities of locomotion between levels. Four combinations of status and locomotion possibilities were used: high-status, nonmobile, HNM; high-status, *downward* mobility possible, HM; low-status, nonmobile, LNM; and low-status, *upward* mobility possible, LM. A fifth variation, with no status differential and nonmobile, served as a control group, CNM. These five treatments, while representing only a sample of the possible variations, seemed most appropriate for an exploratory study.

### Subjects and Experimental Procedure

All subjects were volunteers from second- and third-year college courses in psychology, sociology, and education at the University of Michigan. The five treatments included the following numbers of men and women: HNM, 13 men and 10 women; HM, 13 men and 9 women; LNM, 18 men and 7 women; LM, 18 men and 11 women; and CNM, 13 men and 6 women.<sup>2</sup>

<sup>2</sup> Because no consistent or meaningful sex differences appeared, we shall present only data for men and women combined.

Eight persons met at each experimental session, all of the same sex, and none having more than passing acquaintance with each other. They were given, although in somewhat more extended form, the following introductory instructions.

The purpose of this experiment is to determine how well a group of people can perform a complicated task when the possibilities for communication among them are limited to written messages. Your group will be divided into equal-sized subgroups, working in separate rooms. The first of these subgroups will be given a specific pattern of rectangles. They will write messages to the second subgroup in the adjoining room, so as to enable the latter group to reproduce the pattern by placing bricks in proper position on the floor. All communications between and within the two subgroups will be restricted to written messages, each addressed to a single specific person (designated by letters and numbers) and identified as to sender. All messages will be delivered first to a connecting hallway, where we will record the time on them before delivering them to the proper persons. You may write messages about anything you wish. Your task is simply to work together so as to reproduce quickly and accurately in one room the pattern given in the other room.

After receiving these initial instructions, the two subgroups went to their respective rooms and independently received further instructions calculated to produce the variations in status and mobility. These instructions we shall describe presently. Unknown to the subjects, both subgroups were given the same task of laying bricks in response to messages apparently coming from the other room. These messages, as well as messages supposedly coming from within the same subgroup—i.e., all communications received by each subject—actually comprised a standard set of stimulus messages prepared before the experiment. Supposedly from the other subgroup, each person received eight messages containing instructions for placing bricks, and six containing irrelevancies—inquiring about their task; wondering about the real purpose of the experiment; suggesting getting better acquainted; expressing dissatisfaction with the job; and criticizing the addressee. Supposedly from his own subgroup, each person received six irrelevant messages—suggesting getting acquainted; wondering about the other job; and expressing discontent with their own job, the other group's efforts, and the experiment in general.

Each of the four persons in a given subgroup received a different set of instructions for placing bricks, but all received the same irrelevant messages. The delivery times of the messages were staggered, so that the four persons would not simultaneously receive the same message at once, which might have aroused suspicion. In general, however, all subjects received approximately the same pattern of communications. From one experimental session to another, identical message content and time and order of delivery were used. Because of this uniformity of treatment, and because there was very little interdependence in their work among the

members of a given subgroup (their tasks were restricted to different sections of the room), we may treat our subjects as independent individuals and as the units in our statistical analysis.

All messages written by the subjects were intercepted and preserved. Very few subjects became suspicious of the experimental procedure. Those in whom we detected suspicion were eliminated from the analysis.

Because of these manipulations, the following conditions prevailed in the experiment:

1. All our subjects were doing the same task, that of following instructions in placing bricks. We had merely to produce differences among them in their perceptions of the status of their position in comparison to the status of the group of instruction-givers which was psychologically present in the next room. Thus, the experimental task was the same for all subjects regardless of their perceived position in the group, and differences among our five variations cannot in any way be attributed to differential task requirements.

2. Because all communication taking place was written, we obtained, in effect, a complete stenographic record of it. We do not know how much the fact of having to write acted to restrict or distort communication. The experimental task was easy enough to allow considerable time to be available for writing messages. The volume of communications resulting from this procedure seems reasonably adequate—approximately 12 messages, or a total of 192 words, per person for the 34-minute period devoted to the task.

3. The inclusion of irrelevancies among the standard stimulus messages reduced the restraints against communicating content extraneous to the task. This was essential, because our theoretical interests lay primarily in such categories of content. Our content analysis seems to indicate the success of this procedure, since well over half the messages contained some irrelevant material.

### *Production of Status and Mobility Variations*

Just before the task period began, appropriate combinations of the following instructions were given to the subgroups in order to produce the five experimental variations. These instructions are intended to produce differential perceptions of the "status" of one subgroup relative to the other, and of the "likelihood of locomotion" into the other subgroup. In all cases, the status instructions were given first and were followed by the mobility instructions.

*High-status.* Let me summarize your job. Your job is to follow their messages as well as possible in placing the bricks. You have the best job and the most important job in the group. You have the difficult task of translating their



written messages into an actual pattern of bricks here in this room. This translation requires a great deal of insight, comprehension, and accuracy—and even creativity. Some of their directions are bound to be confused, and you'll have to decide which is the most accurate interpretation of what they say. The success of the group will depend largely upon your decisions. They have the poorer job—the more menial and routine one. You have the difficult problem of interpreting their messages so as to reproduce as accurately as possible the master diagram.

*Low-status.* Let me summarize your job. Your job is merely to follow their messages as well as possible in placing the bricks. They have the best job and the most important job in the group. They have the difficult task of translating the master diagram into words. This translation requires a great deal of ingenuity and creativity. There are many ways in which they can do it and they have to decide which is best. The success of the group will depend largely upon their decisions. Your job is a poorer one—a more menial and routine one. You are simply to follow their messages so as to reproduce as accurately as possible the master diagram.

*Control—no status differentiation.* Let me summarize your job. Your job is to follow their messages as well as possible in placing the bricks. Obviously the two jobs, that of writing instructions from the given pattern and that of placing the bricks, are equally important to the success of the group. Both you people here and the four in the other room have to do your jobs well and accurately if the group is to do well on this task.

*Mobility—locomotion into other subgroup is possible.* (In parentheses are the alternatives used in the high- and low-status variations, respectively.) I'm sure you'd find their job to be (less) (more) interesting than your own (but) (and) we may move some of you to the other job during the course of the experiment. We haven't decided yet how many people should be in each room for the most efficiency. So we may have to move some of you to the (poorer) (better) job. The experimenter may come in and move some of you (down) (up) to the (poorer) (better) job in the other room at any time during the experiment.

*Nonmobility—locomotion into other subgroup is impossible.* (In parentheses are the alternatives used in the high- and low-status variations, respectively.) I'm sure (they'd) (you'd) find (your) (their) job to be much more interesting than (their) (your) own and we'd like to be able to promote some of (them) (you) to (your) (their) job. But in order for the experiment to work best, we want to let (you) (them) stay on it long enough to get used to it and to be able to do (your) (their) best on it. So we'll have to keep (them) (you) on the poorer job throughout the experiment and let (you) (them) stay on the better one.

Special nonmobility instructions for the control group reemphasized the equality of the two jobs and ruled out the possibility that there would be any shifting of subjects from one subgroup to the other.

### ***Kinds of Data***

The basic data consist of the messages written by the subjects. We shall describe the categories into which they were analyzed as we present the comparative results for the five variations. In coding the messages, the first consideration was to produce categories that would have bearing on the kind of hypotheses stated earlier. Beyond this, our main concern was

to describe the major dimensions of the messages, whether or not we had ideas about how they could be affected by the experimental variations.

After the period allotted to the task, on the pretext that we were going to do another short task of the same kind, the subjects were asked to decide whether they wanted to continue the job of placing bricks or to change to the job of giving instructions. On the further excuse that two persons in the experimental group had to be replaced, they were asked whether or not they wished to be eliminated themselves, and which other two persons should be eliminated.

Finally, it being decided that the second task should not be attempted after all, they were asked to fill out a sociometric questionnaire on personal preference and contribution to the total group's productivity. This was followed by a group interview consisting of three open-ended questions which, with increasing degree of focus, attempted to ascertain their perceptions of the relationships, status or otherwise, between the two subgroups.

The experimental session was concluded by assembling the subjects, exposing all the details of the experiment, explaining the general hypotheses, describing the tentative findings from pilot studies, answering the subjects' questions, and requesting that they maintain secrecy about the experiment until its completion.

A diagram was made of the pattern of bricks produced by each subject. By comparing this with the pattern produced if the messages were interpreted accurately, it was possible to determine how many errors each person made in his work.

## Results

### *Evidence on the Effectiveness of the Experimental Manipulations*

We may first examine our data to determine whether or not the various experimental instructions produced the intended effects. Although no evidence was obtained with regard to the subjects' expectations about mobility, several kinds of data are relevant to their perceptions of the status of their jobs. In Table 30.1 are presented the jobs they chose at the end of the experiment on the pretext of having to do a "second" task. Of those making a choice, the Highs more often than the Lows select the job they've had, while the Lows more often choose the other task. This difference is significant at the 5% level of confidence.<sup>3</sup> The Control

<sup>3</sup> It was not possible to test the significance of the various differences reported here by a single, standard statistical technique. At various points in the data, special conditions, such as small N's, extreme splits, or skewed distributions have made it necessary to use special methods. In selecting the most appropriate one we have carefully considered the properties of our data and the assumptions involved in the methods. In ad-

subjects prefer the other job to about the same extent as do the Lows. Slightly more Lows than Highs wish to have themselves eliminated from the "second" task, but this difference is not significant.

TABLE 30.1  
CHOICE OF JOB FOR "SECOND" TASK

EXPERIMENTAL VARIATION	PERCENTAGE OF THOSE MAKING A CHOICE *		NO CHOICE	PERCENTAGE ASKING TO BE ELIMINATED THEMSELVES
	This Job	Other Job		
HNM	59%	41%	04%	09%
HM	67%	33%	05%	14%
LNLM	32%	68%	12%	20%
LM	44%	56%	07%	14%
CNM	41%	59%	11%	11%

\* Highs versus Lows:  $p < .05$ .

In Table 30.2 are summarized the responses to the three open-ended questions given at the end of the session and designed to determine perceptions of the status difference. The set of responses for each subject was coded in terms of whether he felt his job to be lower than, or equivalent to, that of the other group. Replies of having a higher job never occurred.

TABLE 30.2  
RESPONSES TO QUESTIONS AT END OF EXPERIMENT INDICATING AWARENESS OF STATUS DIFFERENCE BETWEEN OWN JOB AND OTHER JOB

Experimental Variation	"Our job is lower" *	"The two are equal"	Not Codable in Terms of Status
HNM	30%	52%	17%
HM	41%	41%	18%
LNLM	64%	32%	04%
LM	62%	31%	07%
CNM	68%	26%	05%

\* Highs versus Lows:  $p < .01$ .

It is evident that the Lows reply more often than the Highs that their job is the lower one, this difference being significant at the 1% level. Although the Controls resemble the Lows in this respect, there are qualitative differences between the two sets of replies. Whereas the Lows describe their job as "low," and one where they have to take orders, they tend to

In addition to the standard techniques involving  $F$ ,  $t$ , and  $\chi^2$  square, we have used the exact tests for  $2 \times 2$  tables (5), the  $t$  test for exponential distributions (2), and the  $d$  test for testing the significance of means without reference to their frequency distribution functions (3).

defend its importance and rarely say that it is too easy. The Controls simply see their job as relatively unimportant, dull, and too simple. This seems to indicate that, whereas the valence of the "task" is negative for the Controls, it is primarily the "position" that is negative for the Lows.

The final data relevant to the efficiency of the experimental instructions are found in the content of the messages. The primary meaning of high-status versus low-status in this experiment is that of high positive valence of the position as compared with low positive, or even negative, valence. To the extent that the instructions had the desired effect, we would expect the Highs to express more satisfaction with their job and the Lows to make more critical comments about theirs. In Table 30.3 are presented

TABLE 30.3

## EXPRESSIONS OF ATTITUDE TOWARD OWN JOB IN THE MESSAGES

Experimental Variation	At Least One Positive Comment	At Least One Negative Comment *	Average Number of Messages Containing Negative References †
HNM	35%	39%	.43
HM	27%	23%	.27
LNM	12%	60%	1.24
LM	24%	66%	1.00
CNM	21%	53%	.79

\* Highs versus Lows:  $p < .01$ .

† Highs versus Lows:  $p < .01$ .

the data bearing out this expectation. The Highs make more positive comments than the Lows but not significantly more. The Lows make more negative comments than the Highs, and this difference is significant at beyond the 1% level. The Controls seem to be intermediate between the Highs and the Lows with respect both to positive and negative comments.

Although the effects demonstrated here are certainly not as strong as we would like, these data consistently indicate that the experimental instructions created differences in the desired direction between the Highs and Lows with respect to perceptions of the job and satisfaction with it. For the low-status group, the possibility of upward mobility seems to have reduced the unattractiveness of the position, the LM's appearing to be somewhat less dissatisfied with their job than the LNM's. Although the comparisons are less consistent, there is some indication that the possibility of downward mobility reduced the attractiveness of the high-status position. To some extent, then, we can rank the four variations in terms of over-all valence from HNM with the highest positive valence, through HM and LM, to LNM with the highest negative valence. We shall find this order to be helpful in interpreting our data in a number



of instances. The CNM variation fits into the lower end of this order, but, as we have already pointed out, appears to differ qualitatively from the Lows.

### *The Communication of Irrelevant Content*

Over half of the messages addressed to the other subgroups, and about three-fourths of those sent to the same subgroups, were coded as having some content irrelevant to the group task. The frequency of sending irrelevant material (both to one's own and to the other subgroup) varies inversely with the over-all valence order of the four variations. The LNM's send the most messages with irrelevant content, the LM's next most, and the HNM's the fewest. None of the differences between variations are significant for the total samples.

We might assume that the trends in our total data are weak because of the low intensity of effects produced by our experimental instructions. On this assumption we have attempted to intensify the experimental effects by selecting, on the basis of perceived status, those subjects upon whom the experimental instructions had maximal effect. Eliminating Highs who report that their job is "lower," including only Lows who describe theirs as "lower" (Table 30.2), and eliminating four additional cases who indicated in the interview a special awareness of our attempt to give them a "set" by the experimental instructions, we are left with 15 HNM's, 13 HM's, 15 LNM's, and 18 LM's. Because we have a total of only 19 Controls, we have not attempted to select among them.

The data on transmission of irrelevant content for these selected samples are presented in Table 30.4. The result of the selection is merely to

TABLE 30.4

#### AVERAGE NUMBER OF MESSAGES HAVING IRRELEVANT CONTENT

EXPERIMENTAL VARIATION	DIRECTION OF COMMUNICATION		TOTAL *
	Other Subgroup	Same Subgroup	
HNM	3.33	2.67	6.00
HM	3.69	2.85	6.54
LNM	5.40	3.93	9.33
LM	4.11	3.05	7.16
CNM	4.05	3.74	7.79

NOTE: For experimental groups selected on the basis of perception of status.

\* Analysis of variance for Highs and Lows:

	Degrees of Freedom	Variance
Status	1	56.47
Mobility	1	8.38
Status $\times$ Mobility	1	28.57
Error	57	13.06

$F = \text{Status/Error} = 4.32, p < .05.$

$F = S \times M/\text{Error} = 2.19, p < .20.$

emphasize the existing trends. The Lows send more irrelevant messages than the Highs, and mobility seems to interact with status (although not significantly) to produce an order that consistently agrees with the **over-all valence of the position.**

A reasonable explanation of this inverse relation, between perceived desirability of position and amount of task irrelevant communication, assumes that irrelevancy provides an escape from the task. The less positively valent a position, the greater the desire to leave it and, consequently, the greater the volume of irrelevant content.

One type of task-irrelevant content—conjectures about the nature of the job in the other subgroup—was examined for the light it could throw upon the substitute locomotion hypothesis suggested by prior studies. This type of communication, which includes queries, surmises, and imaginations about the other job, should provide a substitute for desired locomotion into the other group, if, indeed, any communication can serve such a function. Accordingly, it would occur most frequently for those having low status and little possibility for upward locomotion. There is some support for this hypothesis. Here again, although the trend for the total data is not statistically significant, intensification of the experimental effects, by selection on the basis of perceived status, serves to emphasize that trend and to support the hypothesis. Sixty-seven per cent of the *selected* Lows communicate at least one conjecture about the other job as compared with 46% of the *selected* Highs, this difference being significant at the 11% level. In terms of average number of conjectures, the *selected* Lows send 1.06 while the *selected* Highs send .68, this difference being significant at the 5% level. Although we would expect a difference between the mobile and nonmobile Lows, there is none. It seems likely that the possibility of locomotion was fairly remote in both variations.

Further support for our general hypothesis concerning the occurrence of conjectures about the other job is obtained by dichotomizing our samples on the basis of choosing the same job versus the other job at the end of the experimental sessions (Table 30.1). Assuming that this breakdown distinguishes between those persons who are highly desirous of locomoting into the other position and those who care little, we would expect to find more communication as a substitute for locomotion among the former persons. This proves to be the case as shown in Table 30.5. For the Lows and CNM's, those who choose the other job communicate conjectures about it much more often than do those who are willing to remain in their present positions. The same trends appear for the high-status variations but are much weaker. This is to be expected since, in the case of the Highs, choice of the other job probably reflects only weak forces to locomote. These findings generally seem to warrant the con-

TABLE 30.5

CONJECTURES ABOUT OTHER JOB ANALYZED ACCORDING TO JOB CHOSEN FOR "SECOND" TASK

Experimental Variation	Choice of Job for "Second" Task	N	Percentage Making One or More Conjectures	Average Number of Conjectures
HNM	This	13	54%	.77
	Other	9	56%	.89
HM	This	14	71%	.93
	Other	7	57%	1.14
LNM	This	7	43%	.43 †
	Other	15	73%	1.07
LM	This	12	25%	.50 *
	Other	15	80%	1.47
CNM	This	7	57%	.57 †
	Other	10	70%	1.50

\* "This" versus "Other":  $p < .02$ .† "This" versus "Other":  $p < .10$ .

clusion that communications in the form of substitutes for actual locomotion tend to be initiated by persons who are in low and undesirable positions and who have strong desires to locomote upward. In the present investigation, this type of communication occurs when the possibilities for real locomotion are absent or slight. Whether or not it would appear in excess among the Lows if the possibility of moving upward were kept real and vivid, the present data do not tell us.

### *The Communication of Criticism and Confusion About One's Own Job*

*Criticism of own job.* We have already seen that the Lows tend to communicate negative attitudes about their own job more frequently than do the Highs. We find a further effect of status when we analyze the direction in which this content is communicated. In Table 30.6 whereas there is no difference between the status groups in the percentage communicating negative comments about their own job to their own level, significantly fewer of the Highs than of the Lows send such messages to the other level. Although there are alternative explanations, this suggests that there are restraining forces acting on the Highs against expressing criticism of their own job to persons at lower levels. Thus, for those Highs who are enough dissatisfied with their job to communicate it, the tendency would be to transmit it to persons at their own level. For a similar group of Lows the tendency would be, if anything, to transmit it to the upper level. This phenomenon may be part of a general tendency on the part of the Highs to restrict to their own subgroup any communication content which would tend to reduce the valence of the high position for

the low group. It is interesting to speculate that any such reduction for the low group might also decrease the attractiveness of their position for the Highs. This implies that the status of one's own position depends not only upon how he and his peers evaluate it but also upon the evaluation of people at other levels.

TABLE 30.6  
PERCENTAGE EXPRESSING NEGATIVE ATTITUDE ABOUT  
OWN JOB

EXPERIMENTAL VARIATION	DIRECTION OF COMMUNICATION	
	Other Subgroup *	Same Subgroup †
HNM	17%	22%
HM	09%	14%
LNM	44%	32%
LM	55%	21%
CNM	37%	26%

\* Highs versus Lows:  $p < .01$ .

† Highs versus Lows:  $.50 > p > .30$ .

*Confusion on the job.* In coding the messages, it was found that each person's messages seemed to reflect his general ability to keep up with the influx of work directions. Accordingly each subject was categorized as having "much confusion," "normal confusion," or "no confusion," on the basis of the degree of bewilderment he expressed. This categorization proves to have virtually no correlation with the objective performance measure, number of errors made in placing the bricks. As shown in Table 30.7, the Lows express more confusion about their job than the Highs, this difference being significant at approximately the 8% level of confidence. Although the Lows also tended to make more errors, the difference does not approach significance. In order to demonstrate that the difference in expression of confusion is not due to the slightly superior work of the Highs, Table 30.7 also contains the frequencies of subjects in the three confusion categories for each error score. It can be seen that, with one exception (error score = 1), the Lows express more confusion while doing the same quality of work. It may be noted that the Controls fall between the Highs and Lows with respect both to errors and expressed confusion. This phenomenon is rather difficult to interpret. The alternatives seem to be: (a) the Lows tend to express more confusion simply as a means of showing their distaste for the job, or (b) the Highs restrain themselves from making public the fact of their difficulties with the task, which fact might show them to be incapable of handling the responsibilities of the high status position. The nature of the confused messages which enter into this categorization makes the first alternative rather difficult to



TABLE 30.7

EXPRESSION OF CONFUSION ABOUT THE WORK, ANALYZED ACCORDING TO OBJECTIVE QUALITY OF PERFORMANCE

Experimental Variation	Confusion Category	Error Score					Total Frequency in Each Confusion Category *	Percentage in Each Confusion Category
		0	1	2	3	4+		
Highs	None	8	2	5	4	2	21	47%
	Normal	2	5	7	2	2	18	40%
	Much	0	2	0	1	3	6	13%
							45	100%
Lows	None	4	4	0	4	2	14	26%
	Normal	2	7	5	4	7	25	46%
	Much	2	1	4	3	5	15	28%
							54	100%

\* Highs versus Lows:  $\phi$  equals approx. .08.

accept. The slight tendency for the HM's to express less confusion than the HNM's lends support to the second explanation. We would expect the former group, in order to prevent their demotion, to be more likely to prevent circulation of the fact of their confusion on the task. Although the meaning of these data is certainly open to doubt, we find it most reasonable to conclude that they indicate another instance of restraining forces operating upon the communication processes of high-status persons.

### *The Communication of Criticism of Other Persons*

Considerable numbers of messages were implicitly or explicitly critical of the persons to whom they were addressed. The average number of messages containing such criticism is presented in Table 30.8 for each of

TABLE 30.8

AVERAGE NUMBER OF MESSAGES HAVING CONTENT CRITICAL OF THE ADDRESSEE

EXPERIMENTAL VARIATION	DIRECTION OF COMMUNICATION	
	Other Subgroup	Same Subgroup
HNM	1.56	.43
HM	1.91	.32
LNLM	1.76	.56
LM	1.83	.41
CNM	2.25	.47

the five experimental treatments. For all variations, considerably more criticism is addressed to the other subgroup, presumably because all the work directions are received from them. The outstanding difference among the variations is that the CNM's communicate more criticism of persons in the other subgroups than do subjects in any of the other variations. This result leads one to suspect that the mere introduction of a status difference between the subgroups produces restraints against interlevel criticism.

This phenomenon is more strikingly shown in Table 30.9 which summarizes only explicit criticisms of persons in the other subgroup. There it is clear that the Controls communicate more criticism about the other group than either the Highs or Lows, and this holds true for communication to one's own group as well as for communication to the other one. Thus it appears that the restraints introduced by a hierarchy not only operate against criticizing other-level people "to their face," but also discourages being critical of them in communications to one's own level.

TABLE 30.9

COMMUNICATION OF EXPLICIT CRITICISM OF PERSONS AT OTHER LEVEL

EXPERIMENTAL VARIATION	PERCENTAGE COMMUNICATING AT LEAST ONE CRITICAL MESSAGE	AVERAGE NUMBER	
		Other Subgroup	Same Subgroup
HNM	39%	.52	.13
HM	59%	.64	.36
LNM	68%	.52	.52
LM	48%	.41	.28
CNM	78% *	.79 †	.84 ‡

\* CNM *versus* Others:  $p < .05$ .† CNM *versus* Others:  $p = \text{approx. } .07$ .‡ CNM *versus* Others:  $p < .01$ .

A comparison of the last two columns in Table 30.9 shows that the last statement does not hold equally for the Lows and Highs. A much larger proportion of the Lows' criticism of persons at the other level is directed to their own level. Of the 22 Highs who communicated any criticism of persons in the other subgroup, none sent this criticism exclusively to their own room. Of 31 Lows who criticized persons at the other level, 9 addressed this criticism exclusively to their own subgroups. This difference is significant at the 1% level of confidence. The CNM's resemble the Lows in this respect, i.e., they also tend, relatively speaking, to restrict criticism of the other level to their own room. Although in Table 30.9 the HNM's appear to communicate less total volume of criticism of the other room than do the HM's (perhaps the HNM's have less motivation

to criticize the Lows), the data we have just cited indicate quite clearly that *both* high variations transmit directly to the targets of the criticism a larger proportion of whatever criticism they do feel toward the other subgroup. This result suggests that the Highs feel greater freedom openly to criticize members of the other stratum than do the Lows or Controls. It is quite possible that a high-status position extends the power that occupants feel themselves to possess over certain areas of interpersonal relations within the group, overt and direct personal criticism being one of these areas.

### *The Effects of Status and Mobility on Cohesiveness of the Total Group*

We have both sociometric choices and communication data which reflect the effects of our experimental variables upon interpersonal attractions among the members of the two subgroups. In Table 30.10 are presented the data from the question asked at the end of the session, "Which person in the total group did you like best during the experiment?" The resulting choices are tabulated in terms of whether they consisted of a person in the same subgroup or in the other one. Table 30.10 also presents the frequencies that would have occurred if the choices had been made at random. The tendency in the absence of status

TABLE 30.10

CHOICES OF WHOM THEY LIKED BEST IN THE TOTAL EXPERIMENTAL GROUP

Experimental Variation	Direction of Choice	Obtained Frequency	Theoretical Frequency *	Amount of Over-Choice in Other Subgroup ( $f_o - f_t$ )
HNLM	Other subgroup	20	12.9	7.1
	Own subgroup	3	10.1	
HM	Other subgroup	16	13.3	2.7
	Own subgroup	6	8.7	
LNM	Other subgroup	19	14.9	4.1
	Own subgroup	6	10.1	
LM	Other subgroup	22	17.0	5.0
	Own subgroup	7	12.0	
CNM	Other subgroup	17	11.6	5.4
	Own subgroup	2	7.4	

\* These theoretical frequencies are calculated on the assumption that each person in the total group would be expected to like an equal number of persons in the other subgroup. For example, in the case of the HNLM condition, the number of persons in the other subgroup is 10. If each of the 20 persons in the own subgroup liked an equal number of persons in the other subgroup, the number of persons present would be 10.1 in the pattern of communication.

differentiation (i.e., for the CNM's) is to overchoose persons in the other room. This is to be expected, since most of the friendly and helpful messages in the standard set happened to be designated as coming from one person in the other subgroup. The HNM's also overchoose in this direction. By comparison (although not actually), the HM's underchoose members of the other subgroup, and there is some tendency for the LNM's to do likewise. Thus, there seems to be a slight tendency for the HM's and LNM's to disregard or shun the other level.

TABLE 30.11  
CHOICES OF PERSONS TO REPLACE IN EXPERIMENT

Experimental Variation	Distribution of Subjects' Two Choices	Obtained Frequency	Theoretical Frequency *	Amount of Over-Choice in Category ( $f_o - f_i$ )
HNM	Other subgroup only	6	5.5	.05
	Both subgroups	10	11.6	-1.6
	Own subgroup only	4	2.9	1.1
HM	Other subgroup only	9	7.1	1.9
	Both subgroups	11	12.4	-1.4
	Own subgroup only	2	2.5	-0.5
LNM	Other subgroup only	10	6.4	3.6
	Both subgroups	10	11.3	-1.3
	Own subgroup only	0	2.3	-2.3
LM	Other subgroup only	8	7.6	0.4
	Both subgroups	15	14.3	0.7
	Own subgroup only	2	3.1	-1.1
CNM	Other subgroup only	5	5.6	-0.6
	Both subgroups	9	9.4	0.4
	Own subgroup only	3	2.0	1.0

NOTE. — This table includes only subjects giving the two choices requested in the instructions.

\* See footnote, Table 30.10.

In Table 30.11 are presented the selections of persons to eliminate from the group, these having been made at the end of the experiment on the pretext of preparing to do a second task. Here the HM's and LNM's, as compared with the CNM's and HNM's, tend more often to reject persons at the other level by selecting them for elimination from the group.

These findings are supported by several kinds of communication data. In terms of total undifferentiated volume of communication, the HM's and LNM's, as compared with the other variations, send a smaller percentage of their messages to the other subgroup. The messages they do send to the other level tend to be shorter, while those of the other varia-



tions tend to be longer. Neither of these differences is significant, but the fact that they independently follow the same pattern lends considerable support to the emerging conclusion that the HM's and LNM's tend to reject persons at the other level.

More conclusive evidence appears in an analysis of specific types of communication content. We have already summarized in Table 30.9 the percentage of each experimental sample that expressed explicit criticism of persons at the other level. The HM's and LNM's are higher than the other hierarchical variations (the difference being significant at the 6% level) though lower than the Controls. The final relevant data are presented in Table 30.12. Here are summarized communications which

TABLE 30.12  
AVERAGE NUMBER OF MESSAGES HAVING COHESIVENESS-  
BUILDING CONTENT

EXPERIMENTAL VARIATION	DIRECTION OF COMMUNICATION	
	Other Subgroup	Same Subgroup
HNM	1.43	.78
HM	.82	.45
LNM	.72	.64
LM	1.31	.45
CNM	1.63	.63

would be promotive of better interpersonal relations within the total group. This content, which we have termed "cohesiveness-building," includes overtures to friendship, encouragement and praise, and friendly, personal content. The HM's and LNM's clearly send less of this type of content to the other level, the difference between them and the other three variations being significant at the 1% level.

We find quite consistently, then, that the high-mobile and low-non-mobile variations are the ones most destructive of interlevel cohesiveness. We probably need to appeal to different explanations of this effect for the two different variations. It seems likely that the high-mobiles become hostile towards the Lows because the Lows represent a threat to their occupancy of the high status position (they would presumably be replaced by a person from the Low group). The low-nonmobiles can be expected to be hostile toward persons who occupy the position which they themselves desire but cannot enter. The low mobiles seemed to be intermediate in amount of hostility toward the other level, presumably being less hostile than the LNM's because of the future possibility that they will share the high position with those presently located there. The CNM's would have little instigation to interpersonal hostility on the basis of

status-related threats or jealousies. They would overchoose persons from the other subgroup simply because of the kind of messages received from there. In the case of the HNM's, they can afford to like a lower-status person since he is in no way a threat to their high position.

In summary, the status variations which are most disruptive of the cohesiveness of the total group are high status combined with the possibility of demotion (HM), and low status combined with the impossibility of promotion (LNM). High status with security of position (HNM) and low status with the possibility of upward locomotion (LM) both operate to develop interlevel friendliness to approximately the same degree as does the nonhierarchic situation (CNM).

These findings may explain some of the results from Thibaut's experiment (6). Within his high- and low-status teams, he distinguished between members who were most central (most chosen by the total group) and those who were most peripheral (least chosen). We might assume that centrality yields a feeling of stability or fixity in the present status position and that, in contrast, peripherality makes the present status position seem more tentative. From our conclusions above, then, we would expect Thibaut's central Lows and peripheral Highs to develop the greatest rejection of the group at the other level, just as our stable Lows and unstable Highs did. Indeed, this proves to be the case. The effect is marked for his variation where the Lows were not allowed to locomote into the high-status position. This would appear to warrant broadening our conclusion to the more general statement that high, unstable status and low, stable status are the conditions most detrimental to the total group's cohesiveness.

### Summary

The following conclusions are indicated by the experimental data.

1. The more unpleasant is a position in a hierarchy, the stronger are the forces on a person to communicate task-irrelevant content, this holding true whether the communication is directed to one's own level or to the other level. Irrelevant content is postulated to serve the function of permitting the occupant of an undesirable position to escape from it. Low-nonmobile status is clearly more unpleasant than high-nonmobile status. The combination of low status with upward mobility seems to increase the valence (or decrease the unattractiveness) of the low position, while the addition of downward mobility to high status decreases the valence of the high position.

2. Communication serves as a substitute for real upward locomotion in the case of low-status persons who have little or no possibility of real

locomotion. This was found to hold true only for low-status persons who exhibited some desire to move upward.

3. Restraining forces act upon high-status persons against addressing criticisms of their own job to the lower subgroup and against expressing confusion with their task. We have postulated a general tendency to restrict the transmission of content which would tend to lower the status of one's position in the eyes of others or which would make oneself appear incompetent in the high-status position.

4. The existence of a hierarchy produces restraining forces against communicating criticisms of persons at the other level. High status seems to give persons greater freedom to express whatever criticisms they have of the other level directly to the criticized persons rather than to one's own level.

5. The low-nonmobile and high-mobile conditions are definitely more detrimental to the total group's cohesiveness than are the other status-mobility combinations investigated here. We have explained this in terms of hostility that results from perceiving persons at the other level either as threats to one's own desirable position or as occupants of a coveted but unattainable position.

#### REFERENCES

1. Back, K., Festinger, L., Hymovitch, B., Kelley, H., Schachter, S., & Thibaut, J. The methodology of studying rumor transmission. *Human Relations*, 1950, 3, 307-312.
2. Festinger, L. An exact test of significance for means of samples drawn from populations with an exponential frequency distribution. *Psychometrika*, 1943, 8, 153-160.
3. Festinger, L. The significance of the difference between means without reference to the frequency distribution function. *Psychometrika*, 1946, 11, 97-105.
4. Festinger, L. Informal social communication. *Psychological Review*, 1950, 57, 271-282.
5. Fisher, R. *Statistical methods for research workers*. London: Oliver and Boyd, 1946.
6. Thibaut, J. An experimental study of the cohesiveness of underprivileged groups. *Human Relations*, 1950, 3, 251-278.

## The Dynamics of Power

Ronald Lippitt, Norman Polansky, Fritz Redl,  
and Sidney Rosen

This is one in a series of reports on a program of research into the process of social influence in groups of children (5, 8, 9, 10). Our initial curiosity focused on the phenomenon of behavioral contagion described and clinically conceptualized by Redl (11) in an analysis of some of the operational problems of group therapy. We defined *behavioral contagion* as the spontaneous pickup or imitation by other children of a behavior initiated by one member of the group where the initiator did not display any intention of getting the others to do what he did. This is distinguished from *direct influence*, in which the actor initiates behavior which has the manifest objective of affecting the behavior of another member of the group. We decided to study the hypothesis that the initiation of, and receptivity to, such social influences was related to the position of the actor in the social structure of the group.

The first field study, in 1948, collected data in two camps for disturbed children. One was a boys' camp and the other was for girls. We decided it would be desirable to replicate the study in the boys' camp and were fortunate in again securing full collaboration from the same camp, the University of Michigan Fresh Air Camp<sup>1</sup> (hereafter referred to as M-camp). We selected the same age group as in the earlier study, and again chose for investigation four cabins during each of the two camp sessions. The most significant measurements were duplicated as carefully as possible.

The first study was concerned with groups of disturbed children from a lower socio-economic background. We decided to find a contrasting

From *Human Relations*, 1952, 5, 37-61. Reprinted by permission of the authors and *Human Relations*. The research reported here was supported by a grant from the National Institute of Mental Health of the U. S. Public Health Service.

<sup>1</sup> We wish to express deep appreciation to William Morse, Director of the Michigan Fresh Air Camp, and to Elmer Ott, Director of Camp Mamto-wish of the North Central Area Council of the YMCA, for their understanding support, without which this project could not have been possible.



population of middle class nondisturbed boys. It seemed important to try to find a camp with the same double four-week session, the same size group and adult-child ratio, and as nearly the same program philosophy as possible. After considerable exploration, we were fortunate in securing the wholehearted collaboration of Camp Manito-wish in Wisconsin (hereafter referred to as W-camp). The two research teams of three each were trained together in the use of the same instruments and then spent the summer separated, collecting data in the two camps. One member of the W-camp team spent a final week in M-camp to get an estimate of the intercamp observation reliability.

This report summarizes the comparative findings on behavioral contagion and direct influence processes in the M- and W-camps, and also reports the 1948 data so that the replication of the findings in M-camp can be evaluated, as well as the degree of generalization of the findings to the new type of population in W-camp.

After a number of exploratory excursions, it has seemed to us most fruitful to reformulate our theorizing as contributing to a systematic theory of social power in the face-to-face group. Theorizing about the dynamics of power in larger social structures has proved stimulating in such contributions as those of Weber (3), Parsons (7), and Goldhamer and Shils (4). The latter have suggested that power may be measured by the number of successful power acts divided by the number of attempts made. This idea is very similar to one of the indices used in our two studies (percentage of success of direct influence attempts). Another springboard for us has been the work of Festinger and his co-workers (2). They have followed Lewin (6) in defining power as potentiality to exert influence. As we see it, the dimensions of the concept of social power can be differentiated as units in the following definition.

*Social power* is (a) the potentiality (b) for inducing forces (c) in other persons (d) toward acting or changing in a given direction.

Obviously, there can be no direct operational definition of this concept because so many situations and interactions would have to be explored to discover the exact boundaries of "potential" power. In our study we have made two attempts to approximate a measure of power.

By getting the judgments of all members on the degree of ability of each member to influence "the other fellow," we have computed an *index of attributed power*. This index is, of course, an inadequate direct measure of power for several reasons. For example, the power of one or several members may be untested by the events of group life. There may be a bias of being unwilling to recognize the power of a member to whom one does not willingly submit. But the stability of the index over time, the amount of intermember agreement in making the judgments, and the consistent predicted relationships to other variables suggest that this

index represents a good approach to one aspect of the power syndrome.

The second measure is an index of the degree of behavioral success the member has in attempting to influence others. We might call this an *index of manifest power*. This also is only an indirect approximation of power, because a person with high power may not attempt to exert that power, or may exercise it only in very limited degrees and situations.

It is within this general theoretical framework that we have attempted to organize our findings, and to which we shall return for interpretation in the final section.

### Methods of Data Collection and Analysis

The variables we wanted to measure have been indicated by the theoretical interests outlined above. Because one important objective of the study was to replicate the previous one, we had to consider seriously whether to repeat a particular measurement procedure exactly or refine our measurement of the variable on the basis of what we had learned from experience.

#### *The Measurement of Attributed Power*

In the first study, the children sorted the pictures of the other members of the group into colored boxes on a number of dimensions which were combined into an attributed power index. This was an individual interview situation (10). On each dimension the child was only asked to select two children, the top one and the bottom one. The data from the five highly correlated dimensions of (a) ability in athletics, (b) independence of adults, (c) having ideas for fun, (d) sex sophistication, and (e) independence of social pressure, were combined into an attributed power index in order to get a stable measure which would differentiate the children. This combined index was highly related to the single criterion of projected group influence ("who is best at getting the others to do what he wants them to do"); but each child had only rated two children, so we did not feel the single measure was stable enough to use alone as the measurement of attributed power. In the current study, we refined the data from the single question of "who has influence" by asking each child to rank every other child by hanging the pictures in rank order on a row of nails on a board.

We decided to use this single "purer" measure of attributed power rather than the combined index because it seemed likely to us that, if the two camps were as widely different as we predicted, the various questions about physical strength, sex sophistication, etc., would have quite different meanings and relations to attributed power in the two

camp. Therefore in our report of findings our improved direct measurement of perceived influence is compared with the combined attributed power index of the 1948 study. As in that study, these sociometric interviews were conducted during the first and last weeks of the four-week camp session.

### *Measurement of Liking and Identification*

In 1948 and in 1950, each child ranked the other members of his cabin group on the criterion of "like to be with." In the 1950 study, we added another question which asked each boy to select some other boy in the cabin he "would most like to be." We hoped this latter question would sharpen our understanding of the relationship between interpersonal feelings and the exerting of social influence.

### *Measurement of Perceived Characteristics of Each Member*

Using the same picture ranking technique, each child ranked the other group members on goodness in sports, fighting ability (added in second study), sex sophistication, and knowledge of campcraft.

Each counselor ranked each child in his group four times during the period on scales of adult relatedness, impulsiveness, group belongingness need, feeling of acceptance by the group, conformity to group pressures, warmth of relations with peers, social sensitivity, and activity level. The counselors also did the same rank ordering task as the boys on the items above (liking, attributed power, projected popularity, goodness in sports, fighting ability, sex sophistication, campcraft knowledge).

### *The Measurement of Self-Perception*

A significant addition to the measurement program of the second study was asking each child to place his own picture in the rank order for the dimensions of fighting ability, independence of adults, being liked, and influence in the group. A pilot study in the intervening summer had indicated that children were ready and able to do this without any discoverable problems of anxiety or other aftereffects in the group.

### *The Measurement of Behavioral Contagion and Direct Influence*

A precategorized observation schedule was used by a team of field observers to record behavior. As in the first study, an incident of *behavioral contagion* was defined as: "An event in which a person's behavior is changed to resemble that of another person. This change occurs in a

social interaction situation in which the person acting as the 'initiator' has not communicated intent to evoke such a change in the other." Each child who picked up the behavior was recorded as a *recipient* of the particular contagion. A *direct influence attempt* was defined as: "A social interaction in which one child consciously and deliberately tries to get another child to do something, in such a way that the research observer is aware of the intent." The manner of the influence attempt was coded as directive (ordering, commanding) or nondirective (suggesting, requesting).

### *The Measurement of Total Activity*

On a periodic sampling basis, as indicated by the time schedule below, the observer focused on a single child in the group and recorded all of his activity, coding it in the two categories of social activity and nonsocial activity. Social acts had as their target other persons and referred to the realm of social interaction. Nonsocial acts were directed toward objects or focused on individual activity and autistic verbalizations and expressive movements. This was an addition to the measurements used in the first study.

### *Measurement of Other Characteristics of Social Interaction*

In addition to the recording of influence and total activity, the observers coded a number of "other behavioral indicators" designed to test hypotheses about behavioral aspects of status. These categories were: (a) implies superior knowledge or skill in the other, (b) asks permission of the other, (c) demonstrates sympathetic or solicitous behavior, (d) shows affection-seeking behavior, and (e) displays negative or hostile behavior. All observations, in all categories, were recorded in terms of the initiator and the recipient of the act.

### *The Behavior Sampling Procedure*

The observer, following the group throughout the day, recorded data whenever at least three children of the particular cabin group were together. The three observers were rotated systematically among the four cabins being studied. During the total camp period certain children were, of course, observed together more than others. This was an interesting item of data. But to compare the children on such measures as the amount of behavioral influence, all the data were corrected to equate for amount of time together for each pair of children. Corrected indices were computed as frequencies per time under observation. The amount of observation time was roughly comparable in the first and second studies.



*Interobserver and Intercamp Reliability of Observations of Behavior*

Periodic interobserver reliability checks were made in each camp by having two observers record a sample of cabin behavior simultaneously. The observations of each observer were systematically paired with each other observer's records. Interobserver reliability on relative frequencies of behaviors was computed as a rank order correlation of the data of the two observers for each time sample. The results of this reliability analysis are indicated in Table 31.1. The correlations seem uniformly high enough to give us reasonable confidence in relating our various items of data, and in comparing data from the two camps.

TABLE 31.1

INTEROBSERVER RELIABILITY ON RELATIVE FREQUENCIES OF BEHAVIOR  
IN 1950 STUDY \*

	M-Camp Av. <i>Rho</i>	W-Camp Av. <i>Rho</i>
Contagion initiation	.79	.90
Contagion pickup	.76	.70
Direct attempt to influence	.91	.76
Recipient of influence attempt	.87	.59
Initiator of other behavior indicators	.89	.87
Recipient of other behavior indicators	.77	.82
Total activity level	.87	.87
% Social behavior	.77	.87

\* Although all these figures were not computed in a comparable manner in the first study, the comparable average reliability correlation was .83 for contagion initiation and .76 for contagion pickup in the M-camp in 1948.

*Securing Other Objective Indices on Each Camper*

In addition to the observation data, counselor rating data, and camper rank-order judgments, we obtained the following information for each camper: (a) age, (b) height, (c) weight, (d) last school grade completed, (e) socio-economic status of parent as estimated by classification of father's occupation, and (f) IQ estimate from the vocabulary section of the Stanford-Binet (Form L, 1937).

**The Findings**

The results of our two studies are summarized in four sections which focus on answering the following questions: (a) To what extent is behavior toward power figures consistent with verbalized attribution of power? (b) To what extent is there a self perception of own power? Does it seem to "guide" behavior output? (c) How is the behavior of recipients

of high attributed power different from that of recipients of low attributed power? (d) What evidence is there concerning the determinants of how power is acquired in the group?

### *The Attributor's Behavior toward His High Power Choice*

1. *The group member is more likely to "contage" from the behavior of a high power member.* This central hypothesis is confirmed by the data from the M-camp in 1948 and 1950, and the generalization is extended by the similar findings from the new population of normal middle class boys in W-camp. Table 31.2 indicates that the average correlation between frequency of contagion initiation and attributed power position was .58 as compared with .52 in the 1948 study in the M-camp. The average correlation for the new population is also .58. In all four populations studied, a total of 32 groups, it is clear that group members tend to imitate the behavior of those members to whom they have attributed power to influence the group.

TABLE 31.2

RELATIONSHIP OF ATTRIBUTED POWER TO CONTAGION INITIATION

POPULATION	1948 STUDY			1950 STUDY			
	N	Av. Rho	Sig.	N	Av. Rho	Sig.	Av. Rho Corrected
M-camp	8 groups 64 boys	.52	.001	8 groups 63 boys	.58	.001	.52
Girls	8 groups 40 girls	.71	.001				
W-camp				8 groups 65 boys	.58	.001	.52

An inadequacy of the 1948 study was our inability to give a precise answer to the question: Might the greater volume of behavioral contagion from children with high attributed power be due almost entirely to a generally higher behavioral output of such children? In the second study an independent measure of total behavior output was made. It will be recalled that the acts making up this total behavior sample were obtained independently from the observations of direct influence and behavioral contagion.

The frequency of contagion initiation for each child was divided by his total activity index, and this weighted frequency was correlated with the prestige ranking of each child. As indicated in the right-hand column of Table 31.2, there was no significant drop in the relationship between

attributed power and contagion initiation when this correlation for total activity level was introduced. Our initial interpretation, that perception of power is a major determinant of contagion pickup, rather than sheer activity output, seems to be confirmed.

2. *The group member is more likely to accept direct attempts to influence him which are initiated by a high power figure.* The 1948 study demonstrated that there are important differences for the recipient between the behavioral contagion type of influence, where the imitation is a spontaneous voluntary act, and the direct influence situation where the actor is explicitly trying to influence the behavior of the recipient of his induction attempt. But, although these are two different types of influence situations, the previous study discovered a comparable relationship between success of direct induction attempts and attributed power position to that discovered between contagion initiation and power. Table 31.3 indicates that this relationship is confirmed by the replication

TABLE 31.3

RELATIONSHIP OF ATTRIBUTED POWER TO FREQUENCY OF SUCCESSFUL INFLUENCE ATTEMPTS

POPULATION	1948 STUDY			1950 STUDY			
	<i>N</i>	Av. <i>Rho</i>	Sig.	<i>N</i>	Av. <i>Rho</i>	Sig.	Av. <i>Rho</i> Corrected for Total Activity
M-camp	8 groups 64 boys	.56	.001	8 groups 63 boys	.61	.001	.60
Girls	8 groups 40 girls	.54	.001				
W-camp				8 groups 65 boys	.48	.001	.45

study and can be generalized to the new population. In the population of M-camp boys the second study found an average cabin correlation (*rho*) of .61, compared to a correlation of .56 in the first study. The new population of groups of W-camp boys yields an average correlation of .48. All of these relationships are statistically significant.

Again we were able to check in the second study the extent to which total behavior output might be a factor in determining the frequency of successful influence. The right-hand column of Table 31.3 indicates that a correction for total activity of each child does not change the relationship appreciably.

A second and even more important question may be asked. Is the member with high attributed power really more likely to succeed with each of

his influence attempts, or does he just make more influence attempts? To check this question, we computed the percentage of induction attempts successful for each child and correlated the rank order of these percentages with rank order of attributed power in each cabin. The average correlation for the 16 groups is .42, which is statistically significant (.001). The average correlation is identical in both camps. In general, then, the higher a member's attributed power, the more likely it is that each of his influence attempts will be successful.

3. *A boy who attributes power to a specific other boy is more likely to "contage" and to accept influence from him.* The statistical analyses reported above have shown that, in general, the boys who receive the most verbal choices as power figures in the group are the most frequent sources of behavioral contagion and are most successful in their influence attempts. But this does not actually demonstrate that the behavior of a particular actor is consistent with his particular attribution of power to others. Perhaps this relationship works in general but it is not a very consistent psychological phenomenon from member to member. To check on this possibility a more refined analysis was made in the second study. The data for each boy were analyzed to check the average amount of his contagion pickup and acceptance of influence from members whom he specifically ranked high (upper half of group) or low (lower half of group) on the dimension of group influence.

Because of our interest in the development of social stratification, we made separate analyses for the first and second half of the four-week camp sessions. With one interesting exception, these data, presented in Table 31.4, confirm the more general statistics reported above.

The table indicates that in both camps, during the early and later parts of the periods, the average camper picked up more behavioral contagion from the boys he specifically rated high on influence as compared to those he rated in the bottom half of the cabin group. In the early part of their life together, the average member did not accept a significantly larger proportion of the influence attempts directed toward him by his high power choices than by his low power choices. A more consistent relationship between perception of power and behavioral submission seems to have developed by the second half of the camp period. In the groups of W-camp boys behavior seems to be in line with perception more consistently from the very beginning.

4. *Attempts to influence high power figures are more likely to be non-directive in manner.* A third prediction of the 1948 study was that when the average group member attempted to influence high power members he would tend to be deferential in his manner of induction. The distinction made by the observers was between directive and nondirective manner of attempted influence. As indicated in Table 31.5, this relationship



TABLE 31.4  
RELATION OF OWN POWER CHOICES TO BEHAVIOR

A CONTAGION PICKUP FROM HIGH AS COMPARED TO LOW <sup>o</sup> POWER CHOICES						
	W-GROUPS			M-GROUPS		
	<i>N</i> *	<i>M. diff.</i> †	<i>Sig.</i> ‡	<i>N</i>	<i>M. diff.</i>	<i>Sig.</i>
First half session	64	+.42	.001	61	+.60	.001
Second half session	65	+.76	.001	57	+.81	.001

B  
PERCENTAGE OF DIRECT INFLUENCE ATTEMPTS ACCEPTED FROM HIGH AS COMPARED TO LOW  
POWER CHOICES

	W-GROUPS			M-GROUPS		
	Number Showing Greater % Acceptance From		Chi-Square Test Sig.	Number Showing Greater % Acceptance From		Chi-Square Test Sig.
	High	Low		High	Low	
First half session	41	19	.01	31	30	not sig.
Second half session	40	25	.10	38	19	.02
Combined halves	45	19	.01	31	25	not sig.

\* The number of campers changes slightly from first to second half of session because of new boys entering groups, or insufficient data on several children.

† *M. diff.* equals mean pickup of contagion from high power choices minus mean pickup of contagion from low power choices.

‡ *p*-value was based on *t*-test of difference between related means.

was confirmed again in the groups of M-camp boys; but the same relationship did not hold in the groups of middle class W-camp boys, nor did it hold in the girls' camp in the 1948 study. Several hypotheses concerning the meanings of this camp difference seem possible. Perhaps the general style of influence is different in the two camps. Or perhaps at-

TABLE 31.5  
RELATIONSHIP OF ATTRIBUTED POWER TO RECEIPT OF NONDIRECTIVE INFLUENCE

POPULATION	1948 STUDY			1950 STUDY		
	<i>N</i>	<i>Av. Rho</i>	<i>Sig.</i>	<i>N</i>	<i>Av. Rho</i>	<i>Sig.</i>
M-camp	8 groups 64 boys	.43	.01	8 groups 63 boys	.28	.10
Girls	8 groups 40 girls	.19	not sig.			
W-camp				8 groups 65 boys	.10	not sig.

tempting to influence a member with considerable power is not so dangerous, nor so difficult, in the groups of W-camp boys.

5. *The average member tends to initiate deferential, approval-seeking behavior toward high power figures.* It seems probable that there are many behavioral cues by which one member of the group communicates to another that he "looks up to him" or "looks down on him." Some individuals and groups will be clearer in this communication than others. Some individuals will be more sensitive in reading the cues than others. As described in the section on methodology, the observers in this study systematically recorded behaviors which had the meaning of "implying superior skill," "implying superior knowledge," and "asking for permission." In the first study a sample of four groups in each camp was analyzed. It was found that the upper half of the power hierarchy received significantly more deferential behaviors than the lower half (by *t*-test  $p = .01$  level in boys' camp,  $.10$  in girls' camp). This finding was confirmed in the second study ( $p = .001$  and  $.02$  for the two camps).

### *The Perception of Own Power Position in the Group*

On the basis of the 1948 study we inferred that, from the types of interaction reported above, each member would receive cues which would tell him that he was "being looked up to" or "down at" by his fellow members. We inferred that these behavioral messages would usually effect the self-perception of own power or lack of power in the group and that this self-perception would tend to steer one's influence attempts in the group. Certainly there would be many distortions in these self-perceptions arising from past experience in other groups and from wishful thinking in the present situation, but we postulated that a specific self-percept about position in the present group was being formed and was exercising some control over behavior output. In the first study we lacked the data to check directly on this inference. We had evidence that members behaved differentially toward those to whom they attributed various degrees of power, that the members behaved as though they were aware of this information in their attempts to exert influence. But we lacked a measure of the inferred intervening self-perception of power. In the second study each boy ranked himself on amount of power in the group.

6. *Self-perception of own power tends to be consistent with attribution of power by other members.* The strength and direction of this relationship has been tested by two statistics. All self-rankings of influence in the group were ordered in accordance with attributed rankings. For example, self-rankings of all children ranked highest by the group were tabulated together, those ranked next highest were put together. Means of these grouped self-rankings were then placed in rank order and compared with

the attributed rank order. The degree of correspondence was computed as a rank order correlation (see Table 31.6) and shows nearly perfect

TABLE 31.6

RELATIONSHIP OF SELF-RANKINGS OF INFLUENCE TO ATTRIBUTED RANKINGS

Population	<i>N</i>	<i>Rho</i>	Sig.	<i>Eta</i>	Sig.
M-camp 1950 study	8 groups 63 boys	.99 *	.001	.58	.001
W-camp 1950 study	8 groups 65 boys	.98	.001	.81	.001

\* The *N* for the *rhos* is actually 8 averaged self-rankings and attributed rankings for M-camp and 9 for W-camp.

correspondence. But this type of correlation may give a maximal statement of the degree of relationship. For example, if all self-rankings were distributed at random among attributed positions, mean self-rankings would be equal. The additions of the self-rankings of one set of accurate children would bring the means into perfect correlation with average attributed rankings. A more accurate index of degree of relationship might be one that determines the amount of variance in self-rankings which can be accounted for by attributed rankings. The values of *eta* for this relationship are reported in the right-hand part of Table 31.6. We can conclude that there is a rather strong positive relationship between the boys' self-rankings of their relative power positions in the group and the way they are ranked by the other members of the group.

7. *Self-perception of own power tends to be consistent with behavior directed toward other members.* Certainly the influence attempts of a given person toward another person or group at a particular moment, in a particular situation, are determined by other factors in addition to one's self-perception of relative power. The requiredness of the activity will be very important in many situations. The potency of the need which one is seeking to satisfy by influencing the other will often be important, as will be who is present at the moment. Emotional relationships will also affect the selection of a particular child as a target. The need of the other child to be influenced may play a part. But over the wide range of camp situations, and over the wide range of opportunities to select one child rather than another as an influence target, we would expect self-perception of own power to be an important factor in determining the nature and amount of one's behavior toward others. Our findings are reported in Table 31.7.

We see that in both camps the boys who perceive themselves as being more influential tend to be more frequent initiators of direct influence at-

tempts (combined  $p$  is .02). But only in the groups of M-camp children does this self-perception seem to relate to a more directive pattern of exerting influence. This is part of a consistent picture of camp differences in style of influence. It is interesting to note that in the groups of W-camp boys the members who perceive themselves to be in secure power positions are as ready to accept as to reject influence attempts from others and are generally more active in total behavior toward their social and physical environment. This is not true of the boys in comparable positions in the M-camp where the boys who perceive themselves as high in power are more active rejectors of the influence of others.

TABLE 31.7

RELATIONSHIP OF PERCEPTION OF OWN POWER TO BEHAVIOR TOWARD OTHERS

TYPE OF BEHAVIOR	M-CAMP ( $N = 8$ Groups, 63 Boys) Chi-Square Test ( $p$ )	W-CAMP ( $N = 8$ Groups, 65 Boys) Chi-Square Test ( $p$ )
Frequency of influence attempts	.10	.10
% of influence attempts which are directive	.01	.70
% of influence attempts from others which are accepted	(-).01 *	.70
Total activity output	.70	.001

\* This relationship was significantly negative, i.e., high power members are more resistant to influence attempts. All other relationships in this table are in the positive direction.

### *The Behavior of the Recipient of Attributed Power in the Group*

Now we return to the data which replicate the first study, analyzing the relationship between actual attributed power and behavior by the recipient of the attribution.

8. *The recipient of attributed power makes more frequent attempts to influence the behavior of others, and is more successful in these attempts.* As we have seen above, those members to whom high power has been attributed tend to be correct in perceiving this attribution. They tend to use this perceived status as a basis for making more influence attempts than less powerful members. From this linkage, we would expect to find a positive relationship between attributed position and volume of influence attempts. Table 31.8 confirms this inference. We have already noted in Table 31.3 that these influence attempts tend to be more successful when initiated by recipients of high power ratings. Although these relationships are all significant, they are low enough to remind us that important forces are not accounted for. As the 1948 study pointed out, some children who are not high in attributed power act as though they were, in terms of influence attempts, and other children who do have



high power positions do not use their power to wield influence in the group.

TABLE 31.8

RELATIONSHIP OF ATTRIBUTED POWER TO FREQUENCY OF INFLUENCE ATTEMPTS

POPULATION	1948 STUDY			1950 STUDY		
	<i>N</i>	Av. <i>Rho</i>	Sig.	<i>N</i>	Av. <i>Rho</i>	Sig.
M-camp	8 groups 64 boys	.43	.01	8 groups 63 boys	.49	.001
Girls	8 groups 40 girls	.66	.01			
W-camp				8 groups 65 boys	.35	.02

9. *The recipient of attributed power is more directive in his influence attempts.* We have noted previously (Table 31.5) that the second study confirmed the first in showing that members with high attributed power in the groups of M-camp boys tend to be approached more nondirectively in the influence attempts that are directed toward them. This did not seem to be the case in the groups of W-camp boys. Now we ask the question: "Do members with the power to make successful inductions tend to be more directive in their manner?" In Table 31.9, we see that this is

TABLE 31.9

RELATIONSHIP OF ATTRIBUTED POWER TO PROPORTION OF DIRECTIVE INFLUENCE ATTEMPTS

POPULATION	1948 STUDY			1950 STUDY		
	<i>N</i>	Av. <i>Rho</i>	Sig.	<i>N</i>	Av. <i>Rho</i>	Sig.
M-camp	8 groups 64 boys	.49	.001	8 groups 63 boys	.39	.01
Girls	8 groups 40 girls	.15	not sig.			
W-camp				8 groups 65 boys	.29	.10

the case in the M-camp. In these M-camp cabins those boys with high attributed power are more dominating in behavior pattern, and those with less power are more submissive and deferential in behavior. This is not so clearly the case in W-camp or in the girls' camp.

### *Characteristics Associated with Being a Recipient of Attributed Power*

Although the focus of the study was on the process of influence rather than on the determinants of influence positions, we have a variety of clues which can be summarized at this point.

10. *High power boys tend to be different in the amount and pattern of their total activity output.* The reader will remember that independent samples of total activity were taken which were broken down into social or person-oriented behavior and nonsocial, i.e., object and activity-oriented behavior. A chi-square test of the upper half on power versus the lower half indicated positive relationships (M-camp,  $p = .10$ , W-camp,  $p = .003$ ). The relationships with nonsocial activity were not significant. In making this analysis, it was noted that boys in the W-camp who were very low or very high in object-oriented (nonsocial) behavior seemed to have less attributed power than those boys who showed an average amount. A chi-square test of the middle half against the combined upper and lower quarters on attributed power showed a significant relationship ( $p = .05$ ). This suggests that the high power boy tends to be one who, among other characteristics, is high in his social relations output, but also shows an average amount of object-related and program-activity-related behavior, while the boy who is lowest in power ranking is low in social activity and either very high or very low in nonsocial activity.

11. *High power boys have physical superiority.* On the basis of clinical observations, we postulated that the group standards of these cabin groups would place a positive value on physical prowess as a basis for attributing influence position in the group.

When we explore the meaning of this relationship further we find that neither height nor weight is significantly related to attributed power. In the W-camp height, weight, and age are significantly related to perceived fighting ability (by chi-square  $p = .001$ ,  $.01$ , and  $.001$ , respectively). But in the M-camp none of these variables relate to perceived fighting ability. Observations in the two camps suggest that in the W-camp, where fighting hardly ever occurs, the perception of fighting ability is really a perception of potential fighting ability and is based on the most obvious clues of physical size. In the M-camp, where a good deal of fighting takes place, the perception is actually based on performance, which probably does not correlate very highly with physical size or age in a relatively homogeneous age population, such as in a cabin group.

12. *High power boys are superior in campcraft.* We also thought it was probable in these groups that some power value would be attached to skill in performing the variety of campcraft activities which the adult leadership provides as a part of camp life. This hypothesis is also confirmed. In the M-camp, the  $\rho$  between skill in campcraft as perceived by cabinmates and ratings of power made by the same boys was  $.74$ ; in the W-camp, the  $\rho$  was  $.68$ . Both are significant at the  $.001$  level.

We thought that the "old campers" who had attended camp before would have an advantage in campcraft skills as well as in other ways. But in neither camp did the "old campers" have significantly more attributed

power. Evidently other characteristics outweighed this advantage before much time had elapsed in camp life.

13. *High power boys are liked better and identified with more than other group members.* Certainly we are not able, in this type of analysis, to demonstrate whether boys who achieve high power positions become liked because of their positions or whether boys who are liked have power attributed to them. Such an analysis calls for a developmental or experimental study. However, it will be recalled that each boy did rank all other members of the group on a dimension of personal liking, and also selected the boy in the group he would most like to be. The relationship of these choices to attributed power are reported in Table 31.10.

TABLE 31.10  
RELATIONSHIP OF PERSONAL LIKING TO ATTRIBUTED POWER

RANKED CHARACTERISTIC OF THE MEMBER	M-CAMP			W-CAMP		
	<i>N</i>	Av. <i>Rho</i>	Sig.	<i>N</i>	Av. <i>Rho</i>	Sig.
Being personally liked	8 groups	.63	.001	8 groups	.76	.001
Being identified with	7 groups	.68 *	.001	8 groups	.82	.001

\* One of the eight cabin correlations was negative and significantly out of line with the rest as a population of correlations. It was omitted from this computation. With it included, the average *rho* is .48.

The intercorrelations between liking, perceived fighting ability, and perceived campcraft skills are appreciably lower than the correlation of each of these factors with attributed power. Probably the various perceived characteristics contribute to varying degrees in attributing influence to the power figures in the group.

14. *IQ and impulsiveness are unlikely determinants of attributed power.* We were able to compute an estimate of intelligence (IQ) in each camp from scores on a vocabulary test. As would be expected from the socio-economic differences, the mean IQ estimate was significantly higher in the W-camp (121 as compared to 103), but the total dispersion of scores was greater in the M camp. In the M-camp there was no significant relationship of IQ level to attributed power, although the boys in the middle range on IQ tended to have more attributed power than those boys at the top or bottom of the scale. In the W-camp there was a significant positive relationship (by chi-square test  $p = .01$ ) between IQ and attributed power.

Another measure which was of considerable theoretical interest to us, as the result of our findings in the first study, was the counselor ranking of impulse control. In the 1948 study we found no relationship between ranked level of impulsiveness and influence in the *general run* of camp situations; but where frustration was high and need to attack authority was strong, we found that boys who were ranked high on impulsiveness

tended to become the sources of contagion. In the second study the adult rankings of impulsiveness received indirect validation from relating these rankings to boys' judgments of which boys were most independent of adult control. Impulsiveness related to independence of adults (by chi-square test  $p = .001$ ) in both camps. When we related the rankings of impulsiveness to influence position in the group we confirmed the findings of the first study. There was no relationship of impulsiveness to attributed power in either camp.

### Summary and Conclusions

In our introduction we stated three objectives of the study reported in this paper. It seems appropriate to summarize in terms of these aims.

#### *Replication of the Previous Field Study*

Our repetition of essentially the same study design in the same camp (of disturbed lower socio-economic class children) revealed the same relationship between the variables of attributed power, contagion initiation, successful direct influence, contagion pickup, and acceptance of influence. The following relationships were confirmed.

1. The group member is more likely to "contage" from the behavior of a high power member.
2. The group member is more likely to accept the induction attempts of members with high attributed power.
3. Attempts to influence members with high attributed power are more nondirective in manner than those attempts directed toward low power members.
4. Members with high attributed power receive more deference behavior from other members than do low power members.
5. Members with high attributed power initiate more social influence attempts than do low power members, and are more successful.
6. Members with high attributed power are more directive in the manner of their influence attempts than the low power members.
7. It was again found that attributed power choices were highly related to child judgments of physical prowess and personal liking.
8. There was no relationship between ratings of behavioral impulsiveness and attributed power in the over-all camp situation.

This confirmation of the major findings of the first study seems to us to be a rather impressive check on the type of behavior sampling and categorization techniques used, as well as lending weight to the validity of the data as representing a true picture of the social influence dynamics of this type of population of groups.



### *Checking Additional Hypotheses*

In the theoretical interpretation of the findings of the first study, we postulated the existence of a self-perception of own power which we inferred would develop from the behavioral feedback of deferential behavior from fellow members. We inferred that this self-percept would act as one determinant of behavior output. By extending our methodology to the measurement of perception of own power in the second study, we were able to confirm the following.

9. Perception of own power position in the group is positively related to actual attributed position.

10. Perception of own power is related to social behavior produced. Those with a self-perception of high power make more frequent, more successful, and more directive influence attempts.

A second missing link in our first study was the lack of information on the variable of total activity level. It was impossible to check on the possible interpretations that high power children might be more frequent sources of contagion because of a higher total activity level than low power children. Our independent measurement of activity level in the second study makes it possible for us to draw additional conclusions.

11. Activity level is not an independent determinant of frequency of contagion initiation or of successful induction.

12. Members with high attributed power do tend to be more socially active than low power members. This is not true for frequency of non-social behavior.

In our attempt to explore further some of the determinants of attributed power in M-camp, we made two discoveries:

13. Old campers do not have significantly more attributed power.

14. Intelligence level is not significantly related to attributed power.

### *Generalization to a Different Type of Population*

Our third objective was to explore the generalization of our findings to a very contrasting population of normal middle class boys in a different summer camp setting. As indicated in our presentation of results, most of the basic relations between attributed power, perception of own power, and behavioral influence were found to hold for this different population of groups. But differences were also discovered which have provided clues to further comparative analysis. Camp differences noted in the present paper are the following.

15. In W-camp low power members are not significantly more non-directive in attempting to influence high power members.

16. High power members are not more directive in their attempts to influence low power members.

17. In the W-camp boys who perceived themselves as having high power are not more directive than low power boys.

18. In the W-camp there is a significant relationship between intelligence and attributed prestige, and between height and weight and attributed fighting ability. None of these relationships hold in the M-camp.

These differences seem to suggest a difference in the style and reciprocity of social influence in the two camps, and also differences in certain sources of power, e.g., intelligence, physical size, and conformity.

### *Toward a Theory of the Dynamics of Power*

Our review of the data summarized above has led us to the following tentative theoretical formulation of the dynamics of power in interpersonal group situations of this type.

We hypothesize that achieving and maintaining a position of social power in the cabin group is a positive goal for the members of the cabin group. No doubt some members have stronger needs for social power than others. Some of the boys are probably primarily identified with other groups, so their position in the group under study is not a primary concern. The personality dynamics of other members provide internal restraints against utilizing the power attributed to them, or provide pressures to try to use more power than they have. But probably the acquiring and maintaining of some degree of social power has a positive valence for every member of the group.

We accept as demonstrated that the perceived possession of various combinations of physical, intellectual, and social-emotional resources results in each member being categorized by his fellow members as having more or less social power than others in the group. There is considerable agreement among the members in their judgments of "who is able to get the others to do what he wants them to." This rank ordered consensus we have called *attributed power*.

Our data lead us to believe that in these cabin groups, where group life approaches total 24 hour living, attributed power tends to be undifferentiated as to situation and activity. This is to say, the actor's power may have initially derived from preeminence in some particular type of activity or characteristic, e.g., fighting, sports, campcraft, disobeying adults, strength, or size, but fellow members tend to generalize this preeminence to the general range of group situations and activities.

The data have shown that members tend to behave toward a fellow member in a manner which is consistent with their attribution of power to that member, i.e., behavior toward those with high attributed power tends to be more deferential and less directive.

We accept as demonstrated that most group members perceive cor-

rectly the behavioral cues from fellow members which communicate to them their relative attributed power position in the group.

Also the data lead us to generalize that most members show a tendency to try to utilize (i.e., make manifest) the power which is attributed to them. These manifestations of power through successfully influencing the behavior of fellow members probably have several different psychological meanings at different times for different members, as a means to achieving individual goals calling for instrumental assistance from fellow members, and as a way of demonstrating one's power position in the group.

The findings demonstrate that behavior of a member with high attributed power is more likely to be contagious. We hypothesize that such imitative behavior frequently has the function of being an attempt at locomotion toward the goal of greater social power, in the following ways: (a) The behavior of a member in a high power position is sometimes perceived as representing group standards, and so his acts are spontaneously imitated as group approved or group desired acts. (b) The high power person is perceived (probably unconsciously) as having the kind of position in the group "I would like to have." Therefore, his actions may be perceived as "the kind of actions which help one to achieve a position like that," so his behavior is picked up by others who would like to be "looked up to as he is." (c) From clinical observations we have the hypothesis that in some incidents of contagion a third process may be operating. This is a form of magical thinking in which "acting like him" has the meaning that "I become him" and, therefore, "I am in the same position of influence as he when I act the way he does."

Our comparison of the two camps leads us to believe that, where there is a group atmosphere of competition for power, those in positions of social power tend to be more unwilling to contribute to the manifest power of others. They reject, rather than accept, the influence attempts directed toward them by others.

#### REFERENCES

1. Allport, F. H., & Allport, G. W. Personality traits: Their classification and measurement. *Journal of Abnormal and Social Psychology*, 1921, 16, 1-40.
2. Festinger, L., Schachter, S., & Back, K. *Social pressures in informal groups*. New York: Harper, 1950.
3. Gerth, H. H., & Mills, C. W. *From Max Weber: Essays in Sociology*. New York: Harper, 1950.
4. Goldhamer, H., & Shils, E. Types of power and status. *American Journal of Sociology*, 1939, 45, 171-182.
5. Grosser, D., Polansky, N., & Lippitt, R. A laboratory study of behavioral contagion. *Human Relations*, 1951, 4, 115-142.
6. Lewin, K. *Field theory in social science*. New York: Harper, 1951.
7. Parsons, T. *The social system*. Glencoe, Ill.: The Free Press, 1951.

8. Polansky, N., *et al.* Problems of interpersonal relations in research on groups. *Human Relations*, 1949, 2, 281-292.
9. Polansky, N., Lippitt, R., & Redl, F. An investigation of behavioral contagion in groups. *Human Relations*, 1950, 3, 319-348.
10. Polansky, N., Lippitt, R., & Redl, F. The use of near-sociometric data in research on group treatment processes. *Sociometry*, 1950, 13, 39-62.
11. Redl, F. The phenomenon of contagion and shock effect in group therapy. In W. Healy and A. Bronner (Eds.), *Searchlights on delinquency*. New York: International Universities Press, 1949.



## Some Effects of Power on the Relations among Group Members

Jacob I. Hurwitz, Alvin F. Zander, and Bernard Hymovitch

Several experimental and field studies have been conducted in recent years to explore the effects of differential positions in power hierarchies upon various types of behavior. Back *et al.* (1), Kelley (2), and Thibaut (5), all found that individual group members occupying low status positions tend to communicate upwards in a hierarchy. The explanation advanced was that individuals who want to improve their status but cannot do so will tend to communicate upwards as a form of substitute locomotion. Lippitt, Polansky and Rosen (3), in a field study of social influence among children, found that those high in attributed power make more frequent attempts to influence the behavior of others than do *lows* and are also more successful in these attempts, whereas *lows* engage in approval-seeking behavior more than do *highs*. And finally Pepitone (4), in his study of motivational effects in social perception, found that under certain conditions of power individuals react with perceptual distortion which is facilitative with respect to their goal achievement, i.e., which represents reality as a better state of affairs than actually exists for them.

These three sets of findings appear to suggest that individuals with relatively little power to influence others behave toward those with relatively more power in an essentially egodefensive manner. This defensiveness probably results from the fact that individuals high in the power hierarchy are generally regarded by other group members as being able to help them achieve some of their goals. The power to influence possessed by the *highs* makes the other group members want to be favorably regarded by them. And since these *highs* can exercise their power so as to

To be published in *Human Relations*. Printed here by permission of the authors and *Human Relations*. This study was conducted under a grant in aid from the National Institute for Mental Health of the United States Public Health Service. We are indebted to Julian Morrisette who assisted in the analysis of the data.

help or hurt others, they generate a feeling of uneasiness in other group members. Consequently, group members perceive *highs* and behave toward them in ways calculated to reduce this uneasiness.

This study was designed to check the adequacy of these conceptions among members of discussion groups in a controlled situation.

## Procedure

### *The Subjects and Groups*

The sample consisted of 42 persons working in the general field of mental hygiene in or near a medium-sized Midwestern city. Forty-eight subjects were selected and agreed to attend, but six of them were unable to attend at the last moment. The subjects were mainly social workers (including executives), teachers, counseling and guidance workers, psychiatrists, psychologists, and nurses. They were selected by two local people, qualified to judge the prestige of these persons in the eyes of fellow professionals. Half of those chosen were high in prestige and half were low. This dichotomization was made in order to maximize the likelihood of getting a reasonably good spread in the independent measure of perceived power to influence.

*Perceived power* of any individual to influence other members of his group was defined as the extent to which his opinions on a mental hygiene topic would, in their judgment, carry weight with them. Since it was impractical to get such ratings from the participants in advance of setting up the sample, the assumption was made that power to influence was highly correlated with prestige. As it turned out, the subsequent attributed power-to-influence scores (i.e., the mean rating received by each person) conformed to this initial dichotomization for all but three individuals, thus validating the assumption.

The individuals selected (plus several alternates to allow for refusals) were invited to attend a one-day laboratory conference to discuss common and relevant mental hygiene problems and to provide data on interaction among members of different professional groups. The 48 individuals who agreed to attend were divided by a process of reshuffling into 32 six-man groups varying in their distribution by prestige. No two individuals met more than once in any group. Eight of these groups met simultaneously but separately to discuss the same topic. There were four such discussions, hence each subject discussed four separate topics with four wholly different groups.

Since we wished to predict the effects of perceived power to influence upon degree of liking as well as upon perception of being liked, it was essential to control for liking resulting from previous acquaintance. This

was done, within the limits of feasibility in such a field study, by selecting subjects from various professional groups and from different organizations, keeping apart individuals known to have definite previous acquaintance with one another.

### *The Conference Procedure*

The flow of events during the conference was as follows. The subjects were given an orientation session which explained the general purpose of the conference and prepared them for its measurement phase. The structure of the conference, administrative details, and the nature of the measuring instruments were then described. Each subject, with the help of individual directories, rated the 20 individuals with whom he was to meet as to his perception of their power to influence him. All subjects then broke up into their assigned groups to conduct their discussions and furnish the postsession dependent measures. Group observers supervised the completion of the instruments. Lunch and a coffee period broke up the day, and in the final summary session the actual purpose and nature of the research project were candidly revealed and received with lively interest.

### *The Experimental Task*

The experimental task consisted of four discussion topics selected on the basis of the following criteria. They should be (a) sufficiently general in content to avoid favoring any professional group by virtue of their particular training or experience; (b) sufficiently broad in scope and general in nature to minimize the likelihood of definite previous opinions; (c) controversial enough to insure differences in opinion; and (d) unidimensional in content to permit ratings along one continuum.

The first problem asked for recommendations concerning the type of agency or institution in the field of mental hygiene to which the subjects would prefer to make a sizable financial contribution—one emphasizing environmental change only, one emphasizing therapy only, or one emphasizing both of these. The second problem dealt with the extent to which recent changes in the role of women have had either helpful or harmful consequence to our society from the point of view of mental hygiene. The third problem had to do with the probable effect (ranging from extremely negative to extremely positive) of greater federal participation in local preventive mental health efforts. The final discussion topic concerned the effect on the mental health of the American people of an effective world wide scrapping of atomic bombs in the coming year.

### ***Techniques of Measurement***

The data for the independent measure of perceived power to influence were obtained by administering a preconference rating form. Each subject indicated by a rating, on a precoded seven-point scale ranging from "not at all" to "extremely much," his perception of the individuals with whom he was to meet with respect to their power to influence his opinions and judgments.

The dependent measures were obtained after each of the subgroup sessions. At the end of the half-hour discussion, each subject indicated the extent of his liking for each of the individuals with whom he had just met, his perception of how much each member liked him, and his perception of the extent of verbal participation of each of them. In all cases ratings were made on precoded seven-point scales ranging from "not at all" to "extremely much." *Liking* was operationally defined as the extent to which an individual would enjoy lunching with the other members of his group on occasions similar to the conference situation. During the discussion, an observer kept a record of the length and frequency of remarks made by each group member, as an objective measure of participation.

These measures permitted a testing of predictions about how perceived power to influence would affect (a) degree of liking for other group members; (b) degree of distortion in judgments of amount liked by others; (c) frequency and direction of communication; and (d) degree of distortion in judgments of extent of participation by other group members.

### ***Techniques of Analysis***

Since all the assumptions were of a comparative type (e.g., A will be greater than B), mean values were computed for all measures of the dependent variables and the difference between appropriate pairs of means were evaluated by *t*-test or chi-square. In every case *t*-tests were done initially but, when the variances of the paired distributions were found to be significantly different by *F*-test and the *t*-test showed significant differences between means,  $\chi^2$  was used since *t*-test was not permissible.

## **Results**

The theoretical conception has been advanced that group members perceive *highs* and behave toward them in an egodefensive manner, i.e., in ways calculated to reduce the feeling of uneasiness they experience in their relations with *highs*. This conception was tested by examining (a) the extent to which group members like *highs* and *lows* in their groups; (b) degree of distortion in their estimations of how much *highs* and *lows*



like them; and (c) frequency and direction of communication among group members.

### *Degree of Liking for Others*

It may reasonably be assumed that individuals who desire to reduce feelings of uneasiness experienced in their relations with *highs* will be ready to like these powerful persons both because of the respect and admiration usually accorded to such people and the need, realistic in these discussion groups, to feel that relations with *highs* are satisfactory and pleasant. From this assumption we may expect that (a) *highs* will be liked, on the average, more than *lows*, and (b) *highs* will be liked more by *lows* than will *lows* by *highs*.

In Table 32.1 we see that *highs* are rated somewhat higher than are

TABLE 32.1  
MEAN RATINGS OF EXTENT OF LIKING FOR OTHERS

RELATIVE POWER OF		MEAN LIKING
Rater	Person Rated	
1. Low	High	5.53
2. High	High	5.42
3. Low	Low	5.31
4. High	Low	4.85

NOTE. — Significance of differences: *p* 1 vs. 2 ( $< .60$ ), 1 vs. 3 ( $< .50$ ), 1 vs. 4 ( $< .01$ ), 2 vs. 3 ( $< .70$ ), 2 vs. 4 ( $< .02$ ), and 3 vs. 4 ( $.10$ ).

*lows*. There is a marked tendency for *highs* to like *lows* less than they like other *highs*. *Highs* also like *lows* much less than *lows* like *lows*. As expected, *lows* like *highs* considerably more than *highs* like *lows*. In addition, there is a slight tendency for *lows* to rate *highs* higher than they rate *lows* and higher than *highs* rate *highs*. The data thus in varying degree support our theoretical expectations.

### *Distortion in Judgments of Being Liked*

We have postulated a desire among group members to be favorably regarded by *highs*. Such a desire should lead to a facilitative overrating by group members of the extent to which they are liked by *highs*.

Table 32.2 reveals a tendency for all subjects to underreport how much others like them. This tendency, however, is much less pronounced when the raters are judging how much *highs* like them (in comparison to *lows*). This is evident when we compare the first two rows with the last two. Comparisons between rows 1 and 3, 2 and 4, and 1 and 4 emphasize this

point. It appears from these data that group members *need* to see the *highs* as liking them and report more that they do. This need is probably enhanced by the marked tendency shown in Table 32.1 for *highs* to underlike *lows*.

TABLE 32.2

MEAN RATINGS OF BEING LIKED BY OTHERS  
(Relative to Ratings of Liking Made by Them)

RELATIVE POWER OF		MEAN RATING OF BEING LIKED *
Rater	Person Rated	
1. Low	High	-0.16
2. High	High	-0.66
3. Low	Low	-1.02
4. High	Low	-1.12

NOTE.—Significance of differences ( $\phi$ ): 1 vs. 2 ( $<.80$ )†, 1 vs. 3 ( $<.01$ ), 1 vs. 4 (.001), 2 vs. 3 ( $<.20$ ), 2 vs. 4 ( $<.05$ ) and 3 vs. 4 (.70).

\* Means are algebraic means of deviations from actual rating of liking made by person being rated. A score of 0 indicates, therefore, that the mean rating of being liked is equal to the corresponding mean rating of liking. Negative values indicate that the individual raters tend to underestimate how much they are liked.

† Chi-square used, resulting in a large increase over the  $\phi$  value obtained by  $t$ -test.

If we compare rows 1 and 4 in Table 32.1 with the same rows in Table 32.2, we see that there is a positive relationship between being liked and underreporting of amount liked. This suggests that the more an individual is actually liked by members of his own group, the freer will he be to underestimate the amount of this liking. Conversely, the less he is liked, the greater will be his need to see others as liking him, hence the less free will he be to underestimate this liking. The need of individuals to see *highs* as liking them thus gets added support from the data in Table 32.1.

Table 32.2 suggests that individuals distort facilitatively in an effort to reduce the uneasiness generated in them by *highs*. Whether this distortion is in *reporting* or in *perception*, however, is a question that cannot be answered by our data.

### Frequency and Direction of Communication

In group discussion, the uneasiness of *lows* in their relations with *highs* should exert a restraining force on them against communicating as frequently as do *highs*. However, the need of *lows* to be liked by *highs* should induce them, when they do talk, to communicate to *highs* more often than to other *lows*. We should thus expect *highs* both to communicate more frequently than *lows* and to receive more communications than *lows*.

TABLE 32.3

FREQUENCY OF COMMUNICATION AS A FUNCTION OF FREQUENCY OF BEING COMMUNICATED TO

RELATIVE POWER OF		FREQUENCY OF COMMUNICATION
Communicator	Recipient	
When Recipient Communicates Frequently to Communicator		
1. Low	High	3.61
2. High	High	4.89
3. Low	Low	2.76
4. High	Low	3.66
When Recipient Communicates Infrequently to Communicator		
5. Low	High	1.14
6. High	High	1.87
7. Low	Low	0.92
8. High	Low	1.63

NOTE: Significance of differences ( $p$ ) (a) When only frequency of recipient's communication varies, range of  $p$  values is from  $<.01$  to  $<.001$ . (b) When only power of communicator varies,  $p$ 's range from  $<.40$  to  $.05$  (Chi-square used in two comparisons);  $p$ 's based on  $t$ -test range from  $<.20$  to  $.01$ . (c) When only power of recipient varies,  $p$ 's range from  $<.60$  to  $<.05$ .

By comparing, in Table 32.3, rows 1 and 5, 2 and 6, etc., (i.e., varying frequency of recipient's communication and holding constant power of communicator and recipient alike), we see that there is a very marked tendency for people to communicate more frequently to those who communicate to them frequently than to those who communicate to them infrequently. Given this response phenomenon, is there any evidence of the influence of power on frequency of communication?

Varying the power of the communicator and holding constant the power of the recipient and the frequency of his communication (i.e., comparing rows 1 and 2, 3 and 4, etc.), we find that *high*s consistently communicate more frequently than do *low*s. And finally, varying only the power of the recipient (i.e., comparing rows 1 and 3, 2 and 4, etc.), we see that *low*s tend to communicate more frequently to *high*s than to other *low*s. And since *high*s do likewise, it is of course not surprising to find that *high*s receive more communications than do *low*s.

### Perception of Extent of Participation

Perception of the extent of participation by others carries with it no perceived threat to the rater. Consequently we would not expect to see

in this situation the egodefensive, facilitative distortion which characterizes the judgments of extent of being liked by others. What we might reasonably anticipate, however, is distortion in judgment generated by expectation as to extent of participation of *highs* and *lows*. Let us recall for a moment that people are apparently aware of the restraints on *lows* against communicating in social situations involving individuals of unequal status and of the fact that *lows* are underliked. This awareness may lead people to expect that *lows* should participate relatively little in such situations. Consequently, when *lows* do speak up it should become relatively conspicuous, and the extent of their participation should be exaggerated.

Table 32.4 reveals a tendency for all subjects to overrate the amount others participate in the discussion. When we compare rows 1 and 2 with

TABLE 32.4  
MEAN RATINGS OF AMOUNT OF PARTICIPATION BY OTHERS  
(Relative to Actual Amount of Participation by Them)

RELATIVE POWER OF		MEAN RATING OF AMOUNT OF PARTICIPATION *
Rater	Person Rated	
1. Low	High	+0.23
2. High	High	+0.56
3. Low	Low	+1.38
4. High	Low	+1.42

NOTE: Significance of differences  $\phi$ : 1 vs. 2 (<.20), 1 vs. 3 (<.001), 1 vs. 4 (<.001)†, 2 vs. 3 (<.001), 2 vs. 4 (<.001) and 3 vs. 4 (<.70).

\* Amount of participation is defined as frequency of communication weighted by length. Means are algebraic means of deviations from observed participation, transformed linearly to a seven-point scale. A score of 0 means, therefore, that the mean rating of participation is equal to the corresponding actual amount of participation. Positive values indicate that the raters tend to overestimate how much others participate.

† Chi-square used.

rows 3 and 4, however, we see that this tendency is much greater when the participation of *lows* is being judged than that of *highs*. This is true whether those making the judgments are *highs* or *lows*. (Compare row 1 with 3, and 2 with 4.) We also see that *lows* overrate *highs* less and other *lows* more than do *highs* with respect to other *highs*. The findings thus consistently support the expectation phenomenon described above.

## Discussion

The explanation here advanced for upward communication does not contradict, in our judgment, the one offered by Back *et al.* (1), Kelley (2), and Thibaut (5). Their explanation, that of substitute upward locomotion, applies mainly to those situations having well-defined hierarchical



structures in which individuals in low positions in the hierarchy are strongly motivated to locomote upward in it. In such situations, of course, upward communication probably takes on an egodefensive as well as substitute goal achievement character. It is, however, in the numerous group situations in which the possibility of upward locomotion in a specific hierarchy is smaller, as for example in most informal group situations in which persons are at different status levels but not within the same hierarchy, that the egodefensive explanation we have advanced probably best applies.

Methodologically speaking, this is an experiment in a field situation, not a field study, since we were able to control experimentally the major independent variable by means of selection and assignment of subjects. As such, its chief value lies, perhaps, in that it reveals the same effects of power in a real-life situation previously found by inducing power differences in contrived laboratory situations.

### Summary

An experiment was conducted in a field situation to test a number of assumptions based on two theoretical conceptions concerning the effects of power possessed by individuals to influence other members of their groups. The first conception is that group members occupying low status positions will perceive and behave toward high status members in an essentially egodefensive manner, i.e., in ways calculated to reduce the feeling of uneasiness experienced in their relations with *highs*. Thus, for example, due to this uneasiness *lows* will tend to like *highs*, to overrate the extent to which *highs* like them, to communicate infrequently and, when they do talk, to talk mainly to *highs*. The second conception is that awareness by people of the restraints on *lows* against communicating in social situations involving individuals of unequal status, and of their being underliked by other group members, may engender expectations that *lows* should participate relatively little in group discussions. Consequently, when *lows* speak up it becomes conspicuous, and the extent of their participation is exaggerated. No facilitative distortion operates in judgments of extent of participation of other group members (as it does in judgments of extent of being liked) since the amount of participation *per se* constitutes no threat.

These conceptions are stated in terms of the behavior of individuals of low status. The situation can be viewed equally well from the point of view of persons of high status. *Highs* will behave in essentially the same manner as will *lows*. They will like other *highs*, will want to be liked by them and will talk mainly to other *highs*. However, since they are more secure by virtue of their status than are *lows*, *highs* will be less threatened

by participation in discussion situations. As a consequence, these tendencies will be less marked than in the case of *lows*. Moreover, because *highs* are less defensive than *lows*, they will feel more free to participate in the discussions. And finally, other members will expect that *highs* should participate actively and hence will make less exaggerated judgments as to the extent of their participation.

The reactions of *lows* and of *highs* to their respective status levels may be summarized by viewing *lows* as recipients of these behaviors. *Lows* will be liked less than *highs* by *highs* and *lows* alike; there will be less of a desire among all group members to be liked by *lows*, and fewer communications will be directed to them. And due to the lower expectations as to the amount *lows* should participate in discussions, the extent of their participation will be exaggerated by *highs* and *lows* alike.

To test these assumptions, a one-day conference was held in a Midwestern city attended by 42 persons working in the field of mental hygiene. These individuals met, each with four different groups, to discuss four topics related to mental health and to provide the necessary measures. The independent measure of perceived power to influence was obtained at the very beginning of the conference. The dependent measures, obtained at the subgroup meetings were as follows: postsession ratings of extent of liking for other group members, perceptions of extent of being liked by them, and perceptions of extent of their verbal participation. During the discussions, observers kept records of frequency and length of remarks as objective measures of participation. Since all the assumptions were of a comparative type, mean values were computed for the dependent measures and differences between appropriate pairs of means were evaluated statistically. The results support the assumptions.

#### REFERENCES

1. Back, K., Festinger, L., Hymovitch, B., Kelley, H. H., Schachter, S., & Thibaut, J. The methodology of studying rumor transmission. *Human Relations*, 1950, 3, 307-312.
2. Kelley, H. H. Communication in experimentally created hierarchies. *Human Relations*, 1951, 4, 39-56.
3. Lippitt, R., Polansky, N., & Rosen, S. The dynamics of power. *Human Relations*, 1952, 5, 37-64.
4. Pepitone, A. Motivational effects in social perception. *Human Relations*, 1950, 3, 57-76.
5. Thibaut, J. An experimental study of the cohesiveness of underprivileged groups. *Human Relations*, 1950, 3, 251-278.

## Communication Patterns in Task-oriented Groups

Alex Bavelas

When the nature of a task is such that it must be performed by a group rather than by a single individual, the problem of working relationships arises. One of the more important of these relationships is that of communication. Quite aside from a consideration of the effects of communication on what is generally called "morale," it is easily demonstrated that for entire classes of tasks any hope of success depends upon an effective flow of information. But on what principles may a pattern of communication be determined which will in fact be a fit one for effective human effort? Administrative thinking on this point commonly rests on the assumption that optimum patterns of communications for a task-group may be derived from the specifications of the task to be performed. Students of organization, however, have pointed out repeatedly that working groups—even if one considers only communications relevant to the work being done—invariably tend to depart from formal statements of the patterns to be employed. One may take the view that this departure is due to the tendency of groups to adjust toward that class of communication patterns which will permit the earliest and most satisfying flow of ideas, information, and decisions. In groups which are free of outside control, it is clear that the interaction patterns which emerge and stabilize are products of the social process within the group. A group which exists as a part of a larger organization, however, seldom has the freedom to make such an adjustment. In most organizations the maintenance of the stated—and presumably optimum—patterns of communication is regarded as a first principle of effective performance. It is easy to understand this tendency of administration to inhibit changes in formal communication patterns. One need only remember how intimate the relation is between communication, control, and authority.

From *Journal of the Acoustical Society of America*, 1950, 22, 725-730. Also, from a chapter with the same title in *The policy sciences*, Daniel Lerner & Harold D. Lasswell (Eds.), Stanford, Cal.: Stanford University Press, 1951. Reprinted by permission of the author, the Acoustical Society of America, and Stanford Univ. Press.

In these organizational situations, the imposed patterns of communication may determine certain aspects of the group process. This raises the question of how a fixed communication pattern may affect the work and life of a group. Do certain patterns have structural properties which may limit group performance? May it be that among several communication patterns—all logically adequate for the successful completion of a specified task—one will result in significantly better performance than another? What effects might pattern, as such, have upon the emergence of leadership, the development of organization, and the degree of resistance to group disruption?

These questions have prompted a series of exploratory studies which have grown into a program of research. The findings are incomplete at present, but are of interest in their possible implications. In this chapter, the attempt will be made to describe the areas of present experimental activity and the general direction which the work is taking.

### Some Geometric Properties of Communication Patterns

If we consider who may communicate with whom in a task-group, without regard for the nature or medium of the communication, we can ask a number of simple but important questions. Let us vary the ways in which five individuals are linked<sup>1</sup> to one another (it being understood that

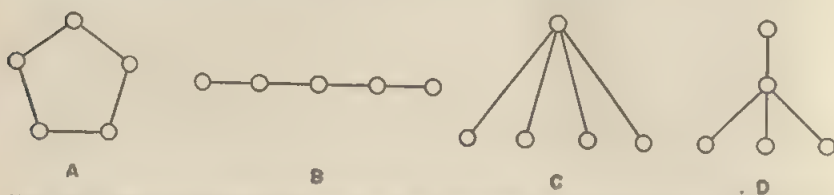


FIG. 33.1. Some different communication patterns. Each line represents a communication linkage.

every individual in the group will be linked to at least one other individual in the same group). What different kinds of communication patterns may we produce, and how may we describe quantitatively the difference between them? Obviously, this would more properly be an exercise for a topologist. For the social scientist it is more to the point to ask, "What differences among these patterns appear (quite intuitively) to be of a kind that would affect human beings in some way?" If we look at the patterns shown in Figure 33.1, we find that intuitive notions come easily—perhaps,

<sup>1</sup> For purposes of this discussion, if individual  $p$  is linked to individual  $q$  it will mean that  $p$  may communicate to  $q$ , and that  $q$  may communicate to  $p$ —that is, the link is symmetrical.



too easily. Students commonly remark, upon seeing patterns *C* and *D* for the first time, that pattern *C* is "autocratic," while pattern *D* is a typical "business setup." Actually, of course, insofar as linkage goes they are identical, the only difference being the arrangement of the dots on this paper. Among patterns *A*, *B*, and *C*, however, we may point to some real differences. For instance, in pattern *A* each individual can communicate with two others in the group directly—that is, without relaying a message through some other person. In patterns *C* and *D* there is only one individual in the group who can communicate directly with all the others.

To make another comparison, any individual in pattern *A* can communicate with any one of the others with no more than a single "relay." In pattern *B* two individuals must relay messages through three others in order to communicate with each other.

In a sense, the comparisons just made involve the notion of "distance" between individuals in a pattern. If we adopt some method of counting the "distances" between individuals, we can make some statements regarding differences between and within patterns. In Figure 33.2 a method

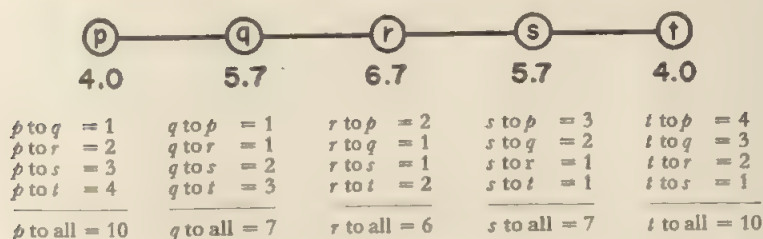


FIG. 33.2. A method of counting "distances" as applied to pattern *B* of Fig. 33.1.

of counting is illustrated as applied to pattern *B* in Figure 33.1. The summation of all internal distances for pattern *B* is 40 ( $\sum d_{x,y} = 40$ ). In a similar way, we find that the same summation for pattern *A* is 30 and for pattern *C*, 32. (Fig. 33.3 shows the tabulations of distances in pattern *C*.)

Turning to the question of differences among positions in the same pattern, we see clearly that position  $q$  in the pattern shown in Figure 33.2 is different from position  $p$  in the same pattern. One aspect of this difference is shown by the tabulation in Figure 33.2:  $d_{p,x} = 10$ ,  $d_{q,x} = 7$ . Position  $q$  in Figure 33.2 has a total distance of 7, just as position  $q$  in Figure 33.3. In this case the distance from  $q$  to all others does not differentiate between the two positions. Yet we cannot but feel from an inspection of the patterns that there is a difference between the two  $q$  positions. We could, of course, point to the fact that in one case  $q$  has two "neighbors" and in

the other case has only one. But let us consider further the question of distance as such. Since the two patterns in question have different  $\Sigma d_{x,y}$  values, it may help if we express the distance "q to all others" in a relative manner. One way of doing this is to calculate for each position the value of the expression:  $\frac{\Sigma d_{q,y}}{\Sigma d_{x,y}}$ . For position  $q$  in Figure 33.2, this quantity would be equal to 5.7; for position  $q$  in Figure 33.3, the quantity would

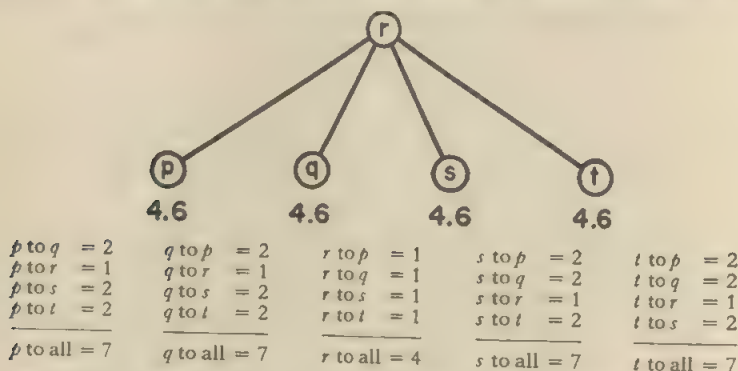


FIG. 33.3. A method of counting "distances" as applied to pattern C of Fig. 33.1.

be equal to 4.6. In Figure 33.4 are shown such similar values for each of the positions in patterns A, B, and C of Figure 33.1.

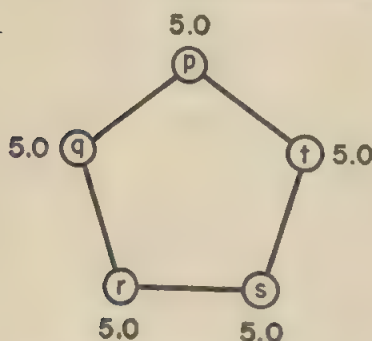


FIG. 33.4. Index of "relative centrality" for each position in three different communication patterns.

If we were to summarize the preceding discussion, we could say that comparisons between two patterns might be made on the basis of "dispersion" (sum of internal distances) defined as  $\Sigma d_{x,y}$ ; and that comparison between positions within the same pattern might be made on the basis of "relative centrality" defined as  $\frac{\Sigma d_{x,y}}{d_{x,y}}$  (the sum of all internal distances of the pattern divided by the total sum of distances for any one position in the pattern).

### Operational Possibilities of Patterns

Let us turn now to the question of how these patterns of communication might be used by a group. Any sensible discussion of "operation" must, of course, be in terms of some specified task. A simple but interesting one would be the following: each of five subjects is dealt five playing cards from a normal poker deck and has the task of selecting from his hand the one card which, together with the four cards similarly selected by the other four subjects, will make the highest-ranking poker hand possible under these conditions.<sup>2</sup> The cards may not be passed around, but the subjects may communicate over the indicated channels, in the particular pattern being tested, by writing messages.

It is clear that pattern *B* in Figure 33.1 may be operated in a number of ways, or "operational patterns." Two of the possible operational patterns for communicating necessary information are shown in Figure 33.5.

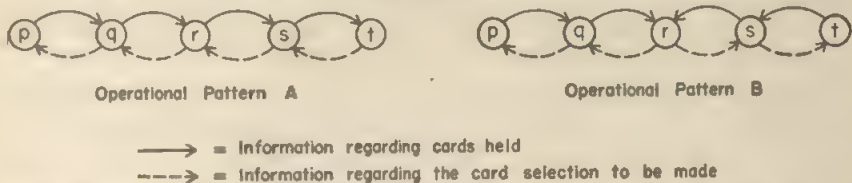


FIG. 33.5. Two possible "operational patterns" with the same communication pattern.

Obviously, it is possible for pattern *B* to be so operated that the subject in any one of the five positions will be the one to have all the necessary information first (and presumably decide which card each subject should select). There are no linkage structures which would force a given method of operation into use. We might ask, however, whether there are differences in efficiency between different operational patterns. Two measures of efficiency come naturally to mind: the number of messages required for task completion, and the time required for task completion.

With respect to the number of messages required, it is possible to make a general statement. In terms of the task given above, one may say that each of the subjects has in his possession one-fifth of the information necessary for a solution. Also, all of the information must at some time be present at one position in the pattern. It can be shown that four messages are necessary and sufficient to accomplish this. Since each subject must know the correct card for him to select, an additional four messages will be required. One may say, therefore, that for any patterns with *symmetrical linkage* the number of messages required will be equal to  $2(n - 1)$ , where  $n$  stands for the total number of positions, and that this

<sup>2</sup> We assume subjects with perfect knowledge of poker-hand ratings.

requirement is completely independent of the linkage pattern as such.

With respect to the time it would take to reach a solution in different patterns, we have a somewhat different situation. We must, of course, for any general discussion of speed of solution assume some standard unit of time to be associated with a message.<sup>3</sup> Let  $t$  equal the time it takes for information to go from one person to another when they are linked, i.e., when they occupy neighboring positions in the pattern.

(Before going on to a consideration of the patterns under discussion, a relationship between  $t$  and the number of individuals in a group should be pointed out. If any linkage pattern is allowed, then it may be stated that the minimum time for solution will have the following relation to the number of individuals in the pattern:

$$t^{\min} = x + 1 \text{ when } 2^x < n \leq 2^{x+1}.$$

This relationship leads to some rather interesting conclusions. Let us consider two groups with unrestricted linkage—one group of nine members and one group of 16 members. With a task such as that of selecting the best poker hand, the minimum time necessary for completion would be the same for both groups, although in the first case we would have nine individuals each possessing one-ninth of the information, and in the second case we would have 16 individuals each with one-sixteenth of the information.)

With  $t$  defined in this way, it is easy to see that operational pattern *A* in Figure 33.5 will require eight time units, while operational pattern *B* in the same figure will require five time units. Obviously, when more than one message is sent in the same time unit, time is saved. However, if individual  $p$  sends a message simultaneously with individual  $r$  (as in Fig. 33.6), his message to  $q$  cannot possibly contain the information

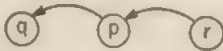


FIG. 33.6. Relation between timing of message and transmission of information. If  $r$  and  $p$  send messages simultaneously,  $p$ 's message cannot contain  $r$ 's information.

contained in the message from  $r$ . We can expect, therefore, that in certain patterns time will be saved at the expense of messages; and doing the task in minimum messages will involve the use of more time units. This is nicely illustrated by pattern *A* in Figure 33.1. In this pattern the problem may be done in as few as three time units, but to do this requires 14 messages; if the problem is done in eight messages (the fewest possible), the number of time units required increases to five.

<sup>3</sup> This is not intended to exclude the possibility that in certain patterns morale effects will materially affect the speed with which an individual might perform



### Some Experiments with Selected Patterns

An analysis such as this must sooner or later lead to the question: "Granted that kind of difference has been demonstrated between one pattern and another, is it a difference which will make a difference?" Such a question can be answered only by experiment. Without attempting a detailed account, a brief mention of two experimental studies would be helpful here.

Sidney Smith conducted an experiment<sup>4</sup> at the Massachusetts Institute of Technology with eight groups of college students, using patterns *A* and *B* shown in Figure 33.1. He gave his groups a task which in its essentials was similar to the poker-hand problem described earlier. Instead of playing cards, each subject was given a card upon which had been printed five symbols taken from among these six:  $\bigcirc$   $\triangle$   $\times$   $\square$   $+$   $\diamond$ . While each symbol appeared on four of the five cards, only one symbol appeared on all five cards. Each group's task was to find the common symbol in the shortest time possible. In each subject's cubicle was a box of six switches, each switch labeled with one of the six symbols. The task was considered finished when each member of the group indicated that he knew the common symbol by throwing the appropriate switch. The switches operated a board of lights visible to a laboratory assistant who recorded individual and group times and errors (an error being the throwing of an incorrect switch). The subjects communicated by writing messages which could be passed through slots in the cubicle walls. The slots were so arranged that any desired linkage pattern could be imposed by the experimenter. No restriction whatever was placed upon the content of the messages. A subject who had the "answer" was at liberty to send it along. The cards upon which the messages were written were coded so that a reconstruction of the communicatory activity could be made.

Each experimental group worked on 15 successive problems. The same six symbols were used throughout, but the common symbol varied from trial to trial. Four groups worked in pattern *A*, and four other groups worked in pattern *B*. No group worked in more than one pattern.

Of the detailed analysis which Smith made of the experimental data, only two findings will be presented here: errors, and the emergence of recognized leaders (see Table 33.1 and Fig. 33.7).

With respect to the emergence of recognized leadership, Smith had each of his subjects answer a questionnaire immediately after the end of the fifteenth trial. One of the questions read: "Did your group have a leader? If so, who?" The answers are shown in Figure 33.7.

While no good theory could be formulated for the differences in numbers of errors, the findings suggested that the individual occupying the

<sup>4</sup> Unpublished; manuscript in preparation.

most central position in a pattern was most likely to be recognized as the leader. Also, from observation of the subjects while they worked, it appeared that the morale of the individuals in the most peripheral (least central) positions of pattern *B* was the poorest.

TABLE 33.1  
NUMBER OF ERRORS IN TWO COMMUNICATION PATTERNS

Error Category	Pattern A	Pattern B
Average total errors	14.0	7.0
Average group errors	5.0	1.5

NOTE. — Total errors = number of incorrect switches thrown.  
Group errors = number of problems which on completion contained at least one error.  
(All figures are averages from the performance of four groups in each pattern. Each group did 15 problems.)

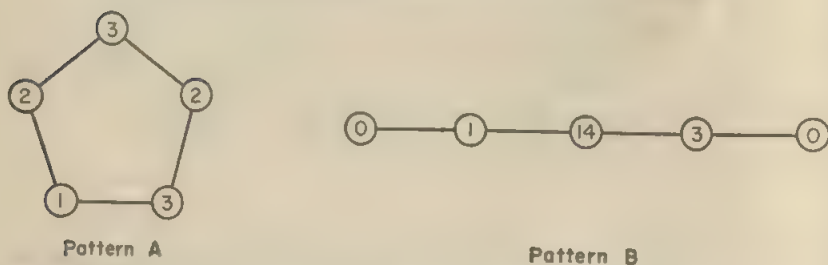


FIG. 33.7. Emergence of recognized leaders in different communication patterns. The number at each position shows the total number of group members who recognized the individual in that position as the leader (Smith's data).

In order to explore these possibilities further, Harold Leavitt did a more detailed study<sup>5</sup> of the same two patterns plus two others. The four patterns he used are shown in Figure 33.8. Leavitt used the same problems and the same experimental setting used by Smith. His findings on errors and leadership recognition are presented in the same form as Smith's data (Table 33.2 and Fig. 33.8).

Leavitt's findings considerably strengthen the hypothesis that a recognized leader (under the conditions of the experiment) will most probably emerge at the position of highest centrality. His findings also lend some support to the hypothesis that errors may be related to pattern properties.

In addition to errors and leadership, Leavitt was interested in the question of morale differences between and within patterns. His subjects were asked two questions to which they responded by ratings from 0

<sup>5</sup> For a detailed account of this experiment, see Harold J. Leavitt, "Some Effects of Certain Communication Patterns on Group Performance" (Ph.D. dissertation, Massachusetts Institute of Technology, 1949).

(very unfavorable) to 10 (very favorable). The data are given in averages of all ratings for subjects in the same pattern (Table 33.3).

In order to check the hypothesis that morale differences exist within patterns and are related to relative centrality, the following analysis of

TABLE 33.2  
NUMBER OF ERRORS IN FOUR COMMUNICATION PATTERNS

Error Category	Patterns			
	A	B	E	F
Average total errors	17	10	3	10 *
Average group errors	3	2	1	1

\* Leavitt attributes almost all of this error figure to one of the five pattern F groups which became confused over the meaning of one member's method of reporting his information.

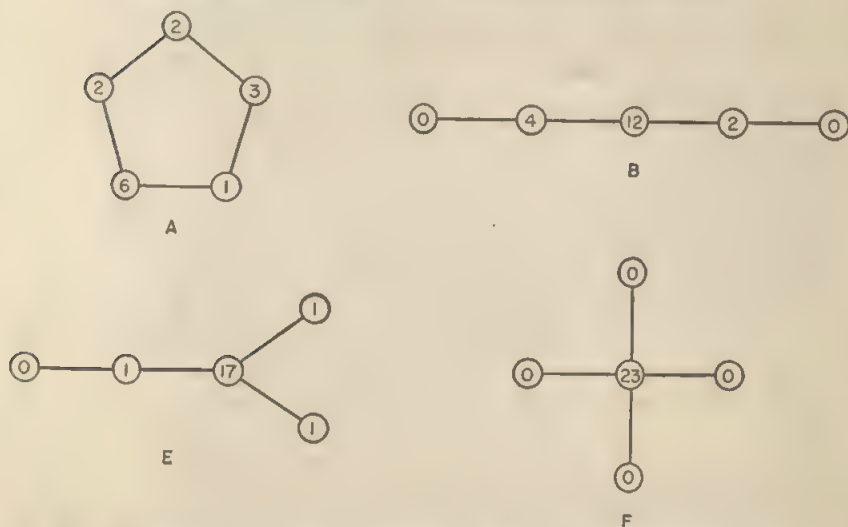


FIG. 33.8. Emergence of recognized leaders in different communication patterns. The number at each position shows the total number of group members who recognized the individual in that position as the leader (Leavitt's data).

TABLE 33.3  
DIFFERENCES OF MORALE AMONG FOUR COMMUNICATION PATTERNS

Questions	Average Rating by Pattern			
	A	B	E	F
How much did you like your job?	6.6	6.2	5.8	4.7
How satisfied are you with the job done?	8.0	5.8	6.0	5.4

the responses to the same two questions was made (Table 33.4). The ratings of men who occupied the most peripheral positions in patterns *B*, *E*, and *F* were averaged together; the ratings made by men in the most central positions of the same three patterns were also averaged together. All ratings made by subjects in pattern *A* were omitted from these calculations for the obvious reason that no one is most central or most peripheral in that pattern.

On the basis of a detailed study of all the data yielded by his experiments, Leavitt makes the following comments.

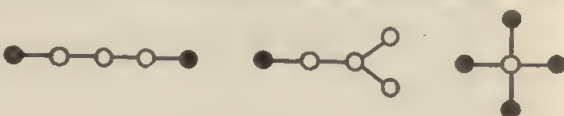
Pattern *F*<sup>6</sup> operated as expected in all five cases. The peripheral men sent their information to the center where the answer was arrived at and sent out. This organization usually evolved by the fourth or fifth trial and was maintained unchanged throughout the remaining trials.

TABLE 33.4

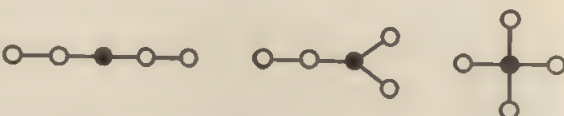
DIFFERENCES OF MORALE RELATED TO RELATIVE CENTRALITY OF POSITION

QUESTIONS	AVERAGE RATING BY POSITION IN PATTERN	
	For 35 Individuals in the Most Peripheral Positions *	For 15 Individuals in the Most Central Positions †
How much did you like your job?	3.2	8.8
How satisfied are you with the job done?	4.6	7.8

\* As represented here (black dots):



† As represented here (black dots):



Pattern *E* operated so that the most central man got all the information and sent out the answer. Organization evolved more slowly than in pattern *F*, but, once achieved, was just as stable.

Pattern *B* was not as stable as patterns *E* and *F*. Although most of the times the answer was sent out by the individual in the most central position, this function was occasionally performed by one of the men on either side of him. Organization was slower to evolve than in patterns *E* and *F*.

Pattern *A* showed no consistent pattern of organization. Subjects, for

<sup>6</sup> In this question, pattern letters used in Figure 33.8 have been substituted for the letters used in Leavitt's report.



the most part, merely sent messages until they received or could work out the answer themselves.

### A Proposed Experiment Using the Same Patterns but a Different Task

In the Leavitt experiment, the normal behavior of a subject in working toward a solution was to send to the others a list of the five symbols appearing on his card. Occasionally, however, something quite different would occur. The subject would send, instead, the one symbol (out of the total six symbols)<sup>7</sup> which was *not* on his card. The advantages of this method in saving time and avoiding possible error are obvious. In a sense, this procedure is a "detour" solution of the problem confronting the subject. The whole task situation was such as to suggest strongly the straightforward action of sending along the symbols one had, rather than the symbol one had not. Although the frequency of occurrence of this insight was fairly even in the groups, its adoption by the group as a method of work was not. It was used by two of the five groups in pattern *A*, by one of the five groups in pattern *B*, and by none of the groups in patterns *E* and *F*. While these differences could not be demonstrated to be significant, they excited considerable speculation. In individual psychology, it has been shown repeatedly that an individual's frame of reference may be such as to inhibit effectively the solving of a problem requiring a detour. With the groups in question, the insight invariably occurred to some member or members. Why, then, did it not spread throughout the group in every case? Might it be that in certain communication patterns the probability of effective utilization of the insights that occur is greater than in others? It was felt that if a more suitable task could be devised, some relationship between the occurrence and utilization of insights and communication pattern might be uncovered.

A task has been constructed which seems to be a step in the right direction. Preliminary trials with it are encouraging. The task consists essentially of forming squares from various geometric shapes. In Figure 33.9 are shown the 15 pieces which make up the puzzle and how they they go together to form five squares.

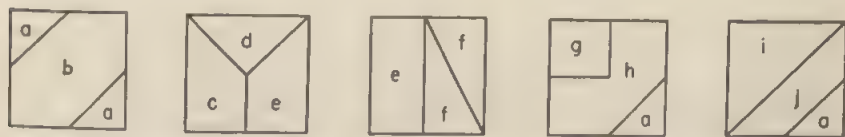


FIG. 33.9. Experimental puzzle. The 15 pieces may be arranged as shown to form five squares.

<sup>7</sup> He could see all six symbols on his box of six switches.

Out of these shapes, squares may be made in many ways. Some of the possible combinations are: *ccaa*, *caaaa*, *caag*, *ffaaaa*, *ffca*, *ffga*, *ica*, etc. However, if, using all fifteen pieces, five squares must be constructed, there is only one arrangement that can succeed—that shown in Figure 33.9. In the experimental situation the pieces are distributed among the five subjects. They are told that the task will be successfully completed when each subject has a square before him and no unused pieces. Messages and pieces may be passed along open channels.

The initial distribution of the pieces may be made so that the probability of "bad" squares being formed is increased ("bad" squares being any which, perfect in themselves, make a total of five squares impossible). A possible distribution is given in Figure 33.10.

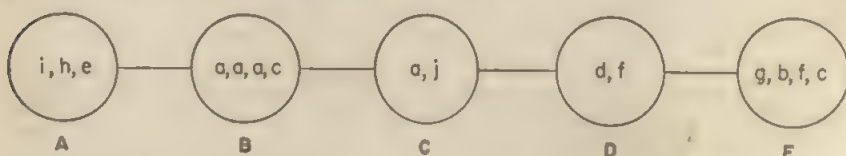


FIG. 33.10. A possible distribution of the pieces of the puzzle (Fig. 33.9) among the positions of a communication pattern.

As can be seen, the pieces with which an individual starts may suggest a particular composition. Or, the pieces an individual starts with may suggest nothing at all and therefore be speedily traded. Let us look at the situation at position *A* in Figure 33.10. The pieces *i, h, e* do not readily suggest a combination of themselves. We may assume that the subject will pass one of the three to position *B*. At position *B*, however, the situation is quite different. The combinations *ace*, or *aaah*, or *aci* all form squares which if completed will lead to group failure, so that any piece received from position *A* merely suggests possible "wrong" squares. In preliminary trials the "bad" squares appear with great regularity. The point of the experiment is what happens once these deceptive "successes" occur. For an individual who has completed a square, it is understandably difficult to tear it apart. The ease with which he can take a course of action "away from the goal" should depend to some extent upon his perception of the total situation. In this regard, the pattern of communication should have well-defined effects.

A formal experiment using this task has not yet been done. Preliminary runs (making use of various communication patterns and concerned primarily with experimental method) have revealed, however, that the binding forces against restructuring are very great, and that, with any considerable amount of communication restriction, a solution is improbable.

### Concluding Remarks

The studies, so briefly discussed in this chapter, if they do nothing more, suggest that an experimental approach to certain aspects of social communication is possible and that, in all probability, it would be practically rewarding. Although the problem of effective communication is an old one, recent trends are bringing to it a new sense of urgency. More and more it is becoming clear that any fundamental advance in social self-understanding must rest upon more adequate intercommunication. In areas where effective and highly integrated social effort is required, the problem is particularly critical. This is nowhere better illustrated than in scientific work. In many fields, it has become impossible to think in other terms than research teams. These groups, aside from the ordinary problems of communication which attend organization, face a whole new set of problems arising from the current emphasis upon "security." In practice, security is invariably translated into "communication restriction." In a sense, the experiments discussed above explore precisely this question: What happens to the performance and morale of working groups when communication is restricted in one way rather than another?

The experimental evidence is provocative. Generalization at such an early stage of work is dangerous, but one is tempted to make a tentative step. It would seem that under the conditions imposed in the experiments, differences between certain patterns very probably exist. The differences most clearly revealed by the experiments are with respect to (a) the location, in the pattern, of recognized leadership; (b) the probability of errors in performance; and (c) the general satisfaction of group members.

Further, we note that in patterns with a high, localized centrality, organization evolves more quickly and is more stable, and errors in performance are less. At the same time, however, morale drops. It is conceivable that poor morale would, in the long run, affect stability and accuracy negatively. The experimental runs of 15 trials conducted by Smith, if extended to a larger number of trials, might well begin to show this effect.

More speculative, at present, is the question of the occurrence and utilization of insight. The preliminary trials with the "five squares" puzzle, while few, are dramatic. Every group succeeded in forming two, or three, or four squares. But the ability to restructure the problem, to give up the partial successes, varied widely from pattern to pattern. If the indications of the few experimental runs that have been made to date are any guide, both occurrence and utilization of insight will be found to drop rapidly as centrality is more and more highly localized. In one

group, the individual to whom the necessary insight occurred was "ordered" by the emergent leader to "forget it." Losses of productive potential, in this way, are probably very common in most working groups, and must be enormous in society at large.



## Interaction and Consensus in Different Sized Groups

A. Paul Hare

The small group has recently become the subject of an increasing amount of research among sociologists and psychologists, reflecting a rising interest in this area which, as Merton has noted (4), cannot accurately be called new; it is rather a renaissance. Cooley and Simmel are only the best remembered of the earlier sociologists who dealt with the small group. Part of the current interest is centered on the factor of group size as evidenced by two recent articles by Bales (1) and James (3). In addition to being an important theoretical question, group size is of concern to such ongoing groups as the National Education Association, the League of Women Voters, and the Tavistock Clinic, which organizations have been forced to reach some conclusions about the optimum size for discussion groups in order to carry out their activities.

The most extensive discussion of the importance of the size of the group in sociological literature is given by Simmel, who provides numerous historical accounts of the importance of group size in social life. Although many of Simmel's remarks have to do with either the very small group such as the dyad and the triad, or the very large group such as the mass, and so are not related directly to the present problem, he does provide the basic premise which underlies this research: that size is a significant determining factor in group interaction (7).

A number of other articles in the sociological and psychological literature suggest hypotheses which are directly or indirectly tested by this experiment. Although some of the literature has dealt with optimum group size, this research is not directly concerned with this problem, but with the problem of demonstrating that there are different patterns of interaction in different sized groups, and that these patterns tend to result in less satisfaction with the participation and less consensus as the group size is increased.<sup>1</sup>

From *The American Sociological Review*, 1952, 17, 261-267. Reprinted by permission of the author and The American Sociological Society.

<sup>1</sup> It is recognized that there are many variables other than size which operate in a

## Experimental Design

To test a specific set of hypotheses concerning the influence of group size, an experiment was designed in which some one hundred and fifty Boy Scouts took part in small discussion groups. In a summer camp, nine groups of five boys and nine groups of 12 boys played a "camping game." First the boys were told a story about a camping trip which ended in misfortune so that it was necessary for each boy to find his way back to civilization alone. Then the boys individually rated 10 pieces of camping equipment<sup>2</sup> in the order of their importance for such a trip. Each group was then asked to decide as a group which of the pieces of equipment was the most important. After the discussion the boys as individuals again rated the 10 pieces of equipment. This was followed by a short questionnaire to record observations about the discussion. Some time after the game the leader was interviewed and given a Thematic Apperception Test.

### Measurement of Consensus

The amount of consensus in the group is measured by having each individual rate the 10 pieces of camping equipment before discussion, the group rate the equipment during discussion, and the individual again rate them after discussion. The rank orders of equipment before discussion for each of the followers<sup>3</sup> in a group are combined by using the statistic  $r_{av}$ , average correlation of all rank orders (8, 372). The  $r_{av}$  is also computed for each group after discussion. The mean correlation ( $\bar{r}_{av}$ ) before discussion, for all groups of the same size, represents the average amount of agreement among Boy Scouts about the importance of camping equipment; and the  $\bar{r}_{av}$  after discussion represents the point to which consensus is increased as a result of the discussion.

Because an increase in consensus cannot be made without some change in individual opinions, another statistic which is used to describe the amount of consistency in each individual as well as his change of opinion in the direction of the group decision is the rank order correlation ( $r'$ ). Three rank order correlations are computed for each individual: the individual's first rating of the 10 items of equipment is correlated with the rating arrived at by the whole group after discussion ( $r'_{1g}$ ), the group

group and are equally important; therefore, the experiment was designed to hold these constant while studying the effects of changes in size. Because leader skill is an important factor which could not be entirely controlled, an evaluation of the leadership was also made to determine its influence on consensus.

<sup>2</sup>The items of camping equipment are: pack, cook kit, sleeping bag, flashlight, waterproof match box, axe, compass, first aid kit, scout knife, and canteen.

<sup>3</sup>The leader's opinion is omitted since his reaction to the discussion is on the average not the same as the followers, as the rank correlation data indicate.

rating is correlated with the final individual rating ( $r'_{21}$ ), and the first individual rating is correlated with the final rating ( $r'_{12}$ ).

A high correlation for  $r'_{12}$  indicates that the group decision is close to that which the individual selects at first, and suggests that he may have influenced the group. A low correlation for  $r'_{12}$  combined with a high  $r'_{21}$  indicates that although the individual originally had ideas which were different, he has been won over to the group decision. Finally a high correlation for  $r'_{11}$  indicates that the individual has not changed his opinion as a result of the discussion.

### *Nature of Interaction*

The questionnaire was designed to reveal some characteristics of the nature of interaction during discussion. Among the factors about which information was sought were the role of persons other than the leader, the importance of enough time for discussion, the amount of participation of the members and their feelings of satisfaction or dissatisfaction, and the breaking of the groups into smaller factions with individual spokesmen.

### *Leader Skill*

Since the personality of the leader and his skill in guiding the group discussion are recognized as major variables in any group processes, an attempt was made to control and measure leadership by the use of specific directions for the leader during the game and a projective test later to indicate his potential leadership skill.

The leaders were chosen, on the basis of recommendations by their camp counselors, as boys who had had leadership experience, held positions of responsibility in their troop, and were recognized as leaders by their peers. Before the group discussion they were taken aside and given instructions as participatory leaders (6). These instructions emphasized that the leader was to participate himself, to see that every member had a chance to speak, to keep the discussion moving so that a rating could be obtained in 20 minutes. Thus the leader was thought of as an agent who helped facilitate the interaction of group members. To check this he was observed during the game and questioned on his methods in a post-experiment interview.

On the basis of a Thematic Apperception Test administered to all leaders, the leaders are classified in three groups representing a rough differentiation between their leadership potentials. These classifications of skill are:

1. Type A (good leaders) - Above average leaders. Boys who seem to be

## Questions about the Discussion

1. Was there      A. too much  
                    B. enough      time for the discussion?  
                    C. too little  
                    A. many
2. Did you have      B. enough      chances to speak?  
                            C. not enough
3. Which statement describes your feeling about the group rating?  
    A. I think the order of equipment the group picked is the right one.  
    B. With a few exceptions, I agree with the group.  
    C. Although the group made a few wise choices, they are off on the wrong track.  
    D. I think the group rating is all wrong.
4. Did your group tend to—  
    A. break into three or more small groups during the discussion?  
    B. break into two sides during the discussion?  
    C. carry on the discussion as a single group?
5. Do you believe your opinion—  
    A. was important in reaching a group decision?  
    B. helped some in bringing the group to a decision?  
    C. didn't have any effect upon the group?
6. During the discussion did—  
    A. a few people speak, each representing the ideas of several others?  
    B. a few people speak representing only themselves?  
    C. just about everyone give his own idea?
7. Who seemed to have the most influence on the group decision?  
    A. The leader.  
    B. The person with the most camping experience.  
    C. The person who talked the most.  
    D. ....
8. Why didn't you say more in the discussion?  
    A. I was afraid the group would make fun of my ideas.  
    B. I don't like to speak before so many people.  
    C. I couldn't think of anything to say.  
    D. I didn't know the other boys too well.  
    E. Most of the boys seemed to have ideas which were different from mine.  
    F. I was not particularly interested in the game.  
    G. ....

Name ..... Troop .....  
Group Leader ..... Date .....

able to handle others of their age reasonably well and desire the status of leader.

2. Type B (average leaders)—Boys not very different from other Boy Scouts who are able to exercise authority in well structured situations where there is no great opposition from the followers.

3. Type C (poor leaders)—Boys who are either so maladjusted or so constricted and passive that they can be expected to have trouble even in a well structured and supervised situation.



## Results

Seven major and three minor hypotheses concerning group size are tested in this research, three of which are not substantiated. Each of the hypotheses is stated below with the data which are related to it:

**Hypothesis 1.** As the size of a discussion group is increased from five to 12 members the amount of consensus resulting from group discussion will decrease.

The first and major hypothesis in this research is substantiated by the  $\bar{r}_{av}$ 's for each set of groups before and after discussion. The average amount of agreement before discussion is almost the same for both groups, about 0.37 (Table 34.1). This is an expected result since the followers in

TABLE 34.1

MEANS OF THE AVERAGE CORRELATION OF ALL RANK ORDERS  
BEFORE AND AFTER DISCUSSION OF THE FOLLOWERS IN GROUPS OF  
FIVE AND TWELVE

Group Size	Number of Groups	$\bar{r}_{av}$ Before	$\bar{r}_{av}$ After	Diff.
5	9	0.38	0.88	0.50
12	9	0.37	0.67	0.30

the different sized groups come from the same population with regard to their initial opinions about camping equipment. The average amount of agreement after discussion increases to 0.88 for the groups of five and 0.67 for the groups of 12, a significant increase (at the 90% level of significance) in both cases.<sup>4</sup> Furthermore, the average amount of change in consensus for the small groups (0.50) is significantly larger than the average amount of change in the large groups (0.30), thus substantiating the first hypothesis.<sup>5</sup>

**Hypothesis 1a.** The followers in a group of five will change their opinion more toward consensus after discussion than those in a group of 12.

This supplementary hypothesis, which is also substantiated, describes

<sup>4</sup> Differences between sets of  $\bar{r}_{av}$  data tested by using the "U" distribution and also a nonparametric run test (5, 391) which makes no assumptions of normality, were found to have a probability of < .02 of occurring by chance in every case.

<sup>5</sup> A pretest experiment was conducted in another camp with groups of five, seven, and 10 Boy Scouts and, although the evidence is not conclusive because of the bias introduced by nonrandom factors in the sample when the results of both experiments are combined the data do suggest that the trends for change in consensus and type of interaction as group size increases follow some thing other than a straight line function. The combined value of the  $\bar{r}_{av}$  After minus  $\bar{r}_{av}$  Before for the groups of 5 is 0.52. The pretest value for groups of 7 is 0.52 and for groups of 10 is 0.48. The groups of from 5 to 10 appear to be fairly similar with a greater change occurring between 10 and 12.

the increase in consensus in the group in another way, this time in terms of the individual (Table 34.2). The average  $\bar{r}'_{12}$  for both groups of fol-

TABLE 34.2

AVERAGE RANK ORDER CORRELATION COEFFICIENTS FOR FOL-  
LOWERS IN GROUPS OF FIVE AND TWELVE

Group Size	N	$\bar{r}'_{12}$	$\bar{r}'_{23}$	$\bar{r}'_{13}$
5	36	0.59	0.97	0.60
12	99	0.56	0.88	0.70

lowers is about 0.57 with an actual difference of 0.01 which is not significant, reflecting, as did the  $\bar{r}_{ac}$  which was computed before discussion, a general level of agreement among Boy Scouts about the importance of camping equipment. The  $\bar{r}'_{23}$  decreases significantly from 0.97 to 0.88 as the group size is increased, indicating less agreement with the group decision in the large groups, and the  $\bar{r}'_{13}$  increases significantly from 0.60 to 0.70 indicating less change of opinion in the large groups.

**Hypothesis 2.** Within groups of the same size the amount of change in consensus will be related to the leader's skill.

The second major hypothesis is only partially verified since the leader's skill has no predictive value in estimating the amount of change in consensus in the small groups; in fact, there is a negative relationship which approaches but does not reach significance (Table 34.3). However, in the groups of 12 there is a significant positive correlation between leader skill and the amount of change in consensus.<sup>6</sup>

TABLE 34.3

AVERAGE CHANGE IN  $r_{cc}$  BY LEADER SKILL

LEADER SKILL	N	AVERAGE CHANGE IN $r_{cc}$
Groups of Five		
A. Good	3	0.39
B. Average	4	0.52
C. Poor	2	0.62
Groups of Twelve		
A. Good	4	0.41
B. Average	3	0.24
C. Poor	2	0.14

<sup>6</sup> When the leaders in each group are ranked in order of ability and this rank order is compared with the group's rank for change in consensus, the resulting rank order coefficient is +0.53 for the small groups with a probability of  $< .10$  and the  $r'$  for the large groups is 0.85 with a probability of  $< .01$ .

Hypothesis 3. The leader in the group of five will have more influence in the group decision than the leader in the group of 12.

The data confirm the hypothesis that the leaders in the small groups will have more influence. The three rank order correlations for the leaders in the groups of five are all significantly higher than the corresponding correlations for the leaders in the groups of twelve (Table 34.4), indicating that the average leader in the group of five agrees with

TABLE 34.4

AVERAGE RANK ORDER CORRELATION COEFFICIENTS FOR LEADERS  
IN GROUPS OF FIVE AND TWELVE

Group Size	N	$r'_{12}$	$r'_{23}$	$r'_{13}$
5	9	0.85	0.98	0.91
12	9	0.64	0.91	0.78

the group more before and after discussion and is more consistent with himself than is the average leader in the group of 12. These higher correlations are only possible if the group rating is close to the leader's original ideas, thus confirming the hypothesis that the leaders in the small groups have more influence.

Hypothesis 4. Persons other than the leader will have more influence on the group when the group is large.

Hypothesis 4 is not substantiated, since the responses to the questionnaire do not indicate that persons other than the leader have more influence in the larger group (Table 34.5). However, significant differences<sup>2</sup> do appear in characteristics of other boys who tend to influence

TABLE 34.5

PERSON MOST INFLUENCING GROUP DECISION

GROUP SIZE	N	LEADER	EXPERIENCED CAMPER	MOST VOCAL PERSON	NO ONE PERSON
Leaders					
5	9	34%	22%	22%	22%
12	9	22%	22%	45%	11%
Followers					
5	36	53%	28%	11%	8%
12	99 *	56%	11%	22%	9%

\*Two comments other than those listed were also given.

A chi-square test is used with the exact cell frequencies for the questionnaire data. In this case the value of chi square for the followers' responses is 6.44 with a probability of  $\sim .10$  for three degrees of freedom. The chi-square test is not appropriate for the leaders data since some of the cell frequencies are less than two.

the group. The followers report that the boy with the most camping experience has more influence in the groups of five (28% in groups of five compared with 11% in groups of 12), while the boy who talks the most has more influence in the groups of 12 (23% in groups of 12 compared with 11% in groups of five). The leaders also feel that the most vocal person is more of an influence in the large group.

**Hypothesis 5.** Given a limited period of time<sup>8</sup> the members of a group of five will feel that they have enough time for discussion and therefore enough chance to speak, while those in a group of 12 will feel that they have too little time to discuss the same problem.

The differences in the feelings of leaders and followers substantiate the hypothesis about the amount of time for discussion. Both differences are significant in the direction of too little time for the large groups. Of the followers in the small groups, only 3% report that they have too little time for discussion compared with 22% in the larger groups. Moreover, in the small groups 80% of the followers say that they have enough time compared with 59% of those in the large groups. About the same proportion in each case say they have too much time, 17% and 19%. Only 11% of the leaders in the groups of five say there is too little time for discussion compared with 56% of the leaders in the groups of 12, and twice as many in the small groups report that they have enough or too much time.<sup>9</sup> Thus, 22% of the leaders in the groups of five report too much time, compared with 11% of those in groups of 12; and 67% report enough time in the small groups compared with 33% in the large groups.

The opinions of the group members are substantiated by the record of the actual time used for the discussion by each group. Six of the large groups used the full 20 minutes for discussion. The average time used in discussion by the small groups, 14.8 minutes, is significantly less than the average time used in the large groups, 18 minutes.

Question 2 on the questionnaire is also designed to give data for Hypothesis 5, since a given unit of time for discussion will allow less opportunity to speak in a large group than it will in a small group. The results are in the expected direction, for 19% of the followers in the small groups report that they have many chances to speak compared with

<sup>8</sup> The time limit for the discussion is related to the ages of the followers and the subject of discussion. Although 20 minutes might curtail sharply the discussion of an adult group, it provides an adequate time for a group of adolescents. This is indicated by the fact that the average time used in discussion by the groups of five is about 15 minutes.

<sup>9</sup> For each table of data for the leaders, it is necessary to collapse two categories so that the resulting two by two table may have expected frequencies of two or more in each cell, and thus be suitable for the chi-square test. In this case the responses "too much" and "enough" are combined. The two by two table is then corrected for continuity by bringing the observed values closer to the expected values by half a unit (2, 93).



only 8% of the followers in the large groups, and only 6% in the small groups say they do not have enough chance to speak compared with 14% in the large groups—a significant difference. The proportion of followers reporting that they have enough chances to speak is almost the same—75% in the small groups and 78% in the large groups. There is a tendency for the leaders to report that they have more chances to speak in the smaller groups, but this difference is not significant.

**Hypothesis 5a.** Not enough chance to participate in the discussion will result in dissatisfaction with the discussion.

In general the hypothesis is substantiated since the individuals who do not have enough chance to speak are the ones who are dissatisfied, and there are more of these in the large groups. There is a significant increase in dissatisfaction with the results of the discussion for the followers as the group size is increased from five to 12.

In the groups of five, 61% of the followers think that the group rating is "correct," 39% "agree with exceptions," and no one disagrees; while in the groups of 12 only 20% feel that the rating is "correct," 63% "agree with exceptions," 12% say that the group made "a few wise choices but were off on the wrong track," and 5% feel that the group is "all wrong." The leaders' opinions are in the same direction, with none of the leaders evidencing dissatisfaction in the small groups compared with 22% in the large groups.

**Hypothesis 6.** In the larger group, members will tend not to participate as frequently because they feel that their opinion is not important for some reasons related to group size.

The followers in the large groups feel that their opinions are less important to a significant degree, but the difference among the leaders, although in the expected direction, is not significant (Table 34.6). As a result, the hypothesis is only partially verified.

TABLE 34.6  
ESTIMATION OF OWN INFLUENCE IN GROUP DECISION

GROUP SIZE	A	IMPORTANT	SOME EFFECT	NO EFFECT
Leaders				
5	9	33%	67%	—
12	9	22%	56%	22%
Followers				
5	36	36%	55%	9%
12	69	19%	60%	21%

**Hypothesis 7.** The large group will tend to break into smaller factions.

Both leaders and followers report that more factions exist in the large groups (Table 34.7). However, the evidence is not conclusive since the

TABLE 34.7

## FACTIONS INTO WHICH THE GROUP DIVIDED

GROUP SIZE	N	THREE OR MORE	TWO SIDES	NO DIVISION
Leaders				
5	9	—	22%	78%
12	9	22%	11%	67%
Followers				
5	36	5%	5%	90%
12	99 *	14%	13%	71%

\* Two nonrespondents.

followers' data approach but do not reach significance, and the leaders' data are not significant.

**Hypothesis 7a.** As factions develop in the large group, one or two persons will become spokesmen for these factions and the discussion will be carried on between them.

Although the over-all differences in the followers' estimates of the representativeness of the speaker's opinions are significant, (Table 34.8)

TABLE 34.8

## REPRESENTATIVENESS OF SPEAKER'S OPINIONS

GROUP SIZE	N	FEW SPEAK, REPRESENTING SEVERAL OTHERS	FEW SPEAK, REPRESENTING THEMSELVES	EVERYONE SPEAKS FOR SELF
Leaders				
5	9	33%	—	67%
12	9	—	—	100%
Followers				
5	36	16%	3%	81%
12	99	20%	13%	67%

and 20% of the followers in the large groups do report that spokesmen represent factions compared with only 16% in the small groups, the evidence is not conclusive, and the hypothesis is not substantiated.

Since question 6 on the questionnaire was designed to get at factional vs. nonfactional discussion groups, the possibility that a few people might speak representing only themselves was included to make sure that the members did not confound this situation with the one in which some persons were spokesmen for factions. Therefore, to test this hypothesis, the responses that "a few people speak representing only themselves" are combined with the responses that "everyone speaks for himself," since both situations do not involve factions. The resulting chi-square for this two by two table is not significant. In addition, although not tested since the chi-square test is inappropriate for their data, the leaders' responses are contrary to the hypothesis.

### Conclusions about Interaction in Different Sized Groups

A general picture of the changes in the nature of the interaction, which occur as group size is increased, is presented in the above hypotheses. As the size of a discussion group is increased from five to 12 members, the degree of consensus resulting from the discussion decreases when the time for discussion is limited. Although the leaders in the small groups tend to have more influence on the group decision than do the leaders in the large groups, their individual skill as leaders is not an important factor. The large groups do, however, demand more skill from the leader, and in these groups the leader's skill is positively correlated with the amount of change in consensus.

Because of the larger number of members in the groups of 12, each member has less time to speak. If an individual has a chance to present his ideas, even if they are not accepted, he is generally satisfied with the results of the discussion. Consequently, since the large group members have fewer chances to speak they are less satisfied. An additional way in which a larger group limits interaction among its members is that it increases the followers' feelings that their individual opinions are not important and therefore not worth presenting to the group.

As the group becomes larger than 12 members, the trend toward factionalism which is indicated in this research should become more apparent.

### REFERENCES

1. Bales, R. F., Strodtbeck, F. L., Mills, F. M. & Roseborough, M. F. Channels of communication in small groups. *American Sociological Review*, 1951, 16, 461-468.
2. Fisher, R. A. *Statistical methods for research workers*. New York: Hafner, 1950.
3. James, J. A preliminary study of the size determinant in small group interaction. *American Sociological Review*, 16, 1951, 474-477.
4. Merton, R. K. Introduction. In Homans, G. C., *The human group*. New York: Harcourt, Brace, 1950.

5. Mood, A. *Introduction to the theory of statistics*. New York: McGraw-Hill, 1950.
6. Preston, M., & Heintz, R. Effect of participatory *versus* supervisory leadership on group judgment. *Journal of Abnormal and Social Psychology*, 1949, 44, 345-355.
7. Simmel, G. *The sociology of . . .* Wolff, K. H. (Trans.), Glencoe, Illinois: The Free Press, 1950.
8. Woodworth, R. S. *Experimental psychology*. New York: Henry Holt, 1938.



## Sociometric Status and Individual Adjustment among Naval Recruits

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Various studies suggest the existence of relationships between group acceptance of an individual, measured sociometrically, and other indications of individual adjustment (2, 4). Careful investigation of such relationships seems likely to throw considerable light both on the factors underlying personality disturbance and on the processes of group behavior.

The present study of naval recruits was designed to investigate the relationships between sociometric status of individuals within recruit companies during basic training, and indices based on three types of data presumed to be relevant to individual adjustment: neuropsychiatric examinations, illness (Sick Bay attendance), and disciplinary offenses. It was hypothesized that each of these indices would correlate negatively with status determined with reference to one or more sociometric criteria. Because it was felt that the findings might have implications for screening or classification procedures, the study was designed to determine, in addition, how early in training the expected relationships might appear.

### Procedure

#### *The Sample*

The sample comprised 16 companies of naval recruits starting basic training at the Great Lakes Naval Training Station during the early part of 1949. Most of these men were between 17 and 20 years of age and had completed from one to four years of high school. At the time of its formation each company contained 60 men. This number fluctuated slightly during the 10 week course of training as men were transferred out or were replaced by transfers from previous companies. Such transfers were oc-

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casioned almost entirely by illness requiring more than five days' hospitalization. The number completing training without transfer varied in this sample from 12 to 56 men per company, with a mean of about 50.

### *Sociometric Data*

Sociometric data were obtained by use of a brief questionnaire asking each man to give the names of men in his company whom he would most want to consider in choosing another man in each of three situations. These choice criteria were: (a) a man to go on liberty with; (b) a man to volunteer with for a particularly tough and dangerous mission; (c) a man to nominate for the job of Acting Chief Petty Officer (the top recruit job in the company). In each instance the subject was encouraged to name as many or as few men as he cared to.

This information was obtained from four companies at the end of the first week and at the end of training (the tenth week); from four others at the end of the second and tenth weeks; from four at the end of the fifth and tenth weeks; and from four at the end of the tenth week only.

Sociometric status scores were computed for each individual simply by counting the choices he received from other men in the company.<sup>1</sup> This was done for each of the three choice criteria separately, and for the three combined.

### *Adjustment Data*

Records of neuropsychiatric examination were available for only 23 cases in the sample. These were men who had received more than the routine screening examination at entrance but had not been discharged, or who were referred to neuropsychiatry during training.

Data were obtained for each recruit concerning the occasions on which he reported to Sick Bay, time spent there, and diagnosis. On the average one-third of the men starting with a company attended Sick Bay at some time or other, and one-fourth of those who completed training in their original company had attended at least once.

Disciplinary records were likewise obtained for each recruit, showing offenses committed, if any, and number of demerits incurred for each. On the average 42% of men completing training with their original company were so disciplined.

<sup>1</sup> All choices received were included, regardless of the fact that the number of choices given varied considerably from one man to another. Available evidence (2) indicates that this gives a better status measure in terms of correlation with a paired comparisons technique than does the more common practice of specifying a particular number of choices.

# Results

## Consistency of Status Scores

Since one object of the study was to determine how early these measures might have predictive value, it is of interest to note indications of their consistency throughout the training period. Table 35.1 shows correlations

TABLE 35.1

CORRELATIONS BETWEEN SOCIOMETRIC STATUS ON INITIAL TEST AND ON FINAL TEST (TENTH WEEK), BY COMPANIES

WEEK OF INITIAL TEST	NUMBER OF COMPANY *	CHOICE CRITERION			TOTAL
		Liberty	Mission	Leader	
First	102	.38	.53	.63	.54
	103	.49	.72	.69	.43
	104	.63	.79	.83	.83
	105	.28	.40	.35	.27
	Mean †	.46	.64	.66	.56
Second	98	.43	.48	.60	.56
	99	.40	.36	.54	.41
	100	.62	.57	.83	.71
	101	.56	.65	.90	.75
	Mean †	.51	.53	.76	.63
Fifth	94	.76	.89	.88	.86
	95	.82	.81	.87	.86
	96	.82	.82	.82	.84
	97	.78	.92	.96	.93
	Mean †	.80	.87	.90	.88

\* Ns vary from 42 to 54 men per company.

† † corresponding to mean Fisher z.

between the results of initial and final sociometric tests for the 12 companies tested twice. It will be seen that even by the end of the first week status differentiation has achieved a degree of stability sufficient to yield average correlations of from .46 to .66 with the tenth-week measures. By the end of the fifth week these correlations rise to between .80 and .90. This provides indirect evidence, incidentally, concerning the high reliability of the status measures. It will be noted also that status on the "leader" criterion tends to be most consistent and that on the "liberty" criterion least so.

## Status in Relation to Neuropsychiatric Record

Due to the small number of subjects for whom neuropsychiatric data were available, it is impossible to test satisfactorily the presence of a

relationship. The trend seems, however, to be in the expected direction. Thus for the 23 cases the median number of total choices received was five in contrast with the median value of 9.4 for the entire sample on the final test. Six of the referrals among these cases were finally either discharged or hospitalized. These\* showed a median of one choice received.

### *Status in Relation to Sick Bay Attendance*

Data on Sick Bay attendance were analyzed first simply in terms of whether or not men reported to Sick Bay during training. Few reported more than once. Each status variable was likewise dichotomized because the distributions of status measures were frequently skewed. In the case of each choice criterion, the cut was made as near to the median for the entire group as possible; between 4 and 5 for "liberty," 2 and 3 for "mission," 0 and 1 for "leader," and 9 and 10 for "total." The fourfold table exhibiting each relationship was then tested by chi-square. In order to gain some idea of the size of the relationships, product-moment coefficients were estimated from phi-coefficients. Table 35.2 shows these esti-

TABLE 35.2

RELATIONSHIPS BETWEEN SOCIOMETRIC STATUS AND SICK BAY ATTENDANCE \*

CRITERION	RECRUIT COMPANIES				
	102-105	98-101	94-97	90-93	All(90-105)
	Initial Test †				
	(1st wk.)	(2nd wk.)	(5th wk.)		
Liberty	-.32	-.31	-.28 §		
Mission	-.19	-.17	-.16		
Leader	-.15	-.09	.002		
Total	-.30	-.12	-.23 §		
	Final Test (Tenth Week) ‡				
Liberty	-.12	-.25 §	-.29 §	-.29 §	-.23
Mission	-.11	-.15	-.26 §	-.39 "	-.23
Leader	-.01	-.09	-.04	-.22 "	-.07
Total	-.04	-.13	-.38	-.47	.23

\* Relationships summarized in terms of  $r$ s estimated from phi-coefficients.

†  $N$  for four-company groups on Initial Test varies from 208 to 236.

‡ Total  $N$  on Final Test is 207.  $N$  for four-company groups varies from 172 to 205.

§ Corresponding chi-square significant at 5% level.

|| Corresponding chi-square significant at 1% level.

mated  $r$ 's, based in most cases on the pooled results for four companies.

It should be noted that data are included here only for men who joined



one of these companies at the time of its formation and remained with it until the time of the sociometric test in question; men transferring into the company after formation are not included. Thus all men considered had an equal opportunity to achieve sociometric status. The fact of being ill prior to the test could not impair this opportunity appreciably, for hospitalization of five days or more resulted in transfer out of the company, and relatively few of the remaining men who went to Sick Bay were hospitalized at all. It should be noted further that the initial test data include men who were subsequently transferred out, in addition to those who remained throughout training. This accounts for the difference in  $N$ 's between initial and final tests.

Several points of interest may be noted in Table 35.2. First, the relationships are with one exception negative, and many significantly so, indicating that men receiving fewer choices tend more frequently to go to Sick Bay. Second, with respect to the particular choice criterion, significant relationships are found rather consistently for "liberty," in some cases for "mission," but in no instance for the "leader" criterion. Third, significant relationships are found on the initial test, even as early as the first week, but only for "liberty," among the single criteria. In some cases, notably in companies 102-105, the initial test relationships are higher than those obtained on the final test. This seems due in large part to the inclusion of men in the initial test data who subsequently became sufficiently ill to be transferred out of their companies. If these cases are excluded from the data for companies 102-105, for example, the estimated  $r$  for the "liberty" criterion drops to  $-.16$ .

Since it is reasonable to assume that factors related to social acceptance do not have equal importance for all forms of illness, the question may be raised as to the possible existence of status differences among men given different diagnoses at Sick Bay. Table 35.3 shows for men attending Sick Bay the relationship of recorded diagnosis to status on the several choice criteria. In order to maintain fairly adequate cell frequencies, the status variables were dichotomized at lower cutting points than were employed in the previous analyses, and data from all companies were pooled for the initial and for the tenth-week tests.

Table 35.3 presents the values of chi-square obtained in testing the agreement of the two distributions of frequencies for each criterion. None of these approaches significance. In other words, although men not going to Sick Bay differ in status from those who do, there seem to be no significant status differences related to diagnosis among men in the latter group. It may be noted, however, that cases of measles tend toward lower status on the initial test, and cases of catarrhal fever in the same direction on the final test.

TABLE 35.3

FREQUENCIES OF VARIOUS SICK-BAY DIAGNOSES FOR MEN HAVING RELATIVELY HIGH AND LOW SOCIOMETRIC STATUS

CRITERION	RECEIVED	DIAGNOSIS RECORDED					CHI-SQUARE †		
		Pharyngitis	Tonsillitis	Catarrhal Fever	Measles	Misc. *		Complex †	None Recorded
Initial Test (Companies 94-105)									
Liberty	4 or more	16	19	10	5	21	5	10	4.89
	3 or less	21	14	21	15	31	12	11	
Mission	2 or more	22	18	12	7	23	8	13	3.49
	1 or none	15	15	19	13	29	9	8	
Leader	1 or more	23	20	12	5	26	8	14	6.12
	none	14	13	19	15	26	9	7	
Total	7 or more	18	17	12	4	22	6	11	4.12
	6 or less	19	16	19	16	30	11	10	
Final Test (Companies 96-105)									
Liberty	4 or more	29	27	13	0	23 §	8	5	3.38
	3 or less	19	16	23	2	22	7	5	
Mission	2 or more	31	23	10	0	26	9	5	5.80
	1 or none	17	20	26	2	19	6	5	
Leader	1 or more	28	19	10	0	21	8	5	4.47
	none	20	24	26	2	24	7	5	
Total	7 or more	26	25	11	0	25	9	4	3.80
	6 or less	22	18	25	2	20	7	6	

\* A variety of diagnoses occurring infrequently were lumped together by the writer under the heading, "Miscellaneous."

† Cases receiving two or more different diagnoses on different occasions were classed as "Complex."

‡ Chi-square was computed on the basis of 1 degree of freedom.

§ The "Measles" category was pooled with "Miscellaneous" in computing chi-squares on the final test, thus giving 5 d.f.

*Status in Relation to Disciplinary Offenses*

Data on disciplinary offenses were treated simply in terms of whether or not men received demerits during training. Table 35.4 shows the correlations with sociometric status, derived in essentially the same fashion as those in Table 35.2. In this instance, however, the analysis of both initial and final test results was confined to men remaining with their

TABLE 35.4

RELATIONSHIPS BETWEEN SOCIOMETRIC STATUS AND DISCIPLINARY OFFENSES\*

CHOICE CRITERION	RECRUIT COMPANIES				
	102-105	98-101	94-97	90-93	All (90-105) †
Initial Test					
	(1st wk.)	(2nd wk.)	(5th wk.)		
Liberty	.10	-.23 ‡	-.15		
Mission	-.02	-.24 ‡	-.35 §		
Leader	-.03	-.19	-.37 §		
Total	.07	-.20	-.35 §		
Final Test (Tenth Week)					
Liberty	-.14	-.29 §	-.21	-.10	-.21 §
Mission	-.24 ‡	-.37 §	-.29 ‡	-.16	-.29 §
Leader	-.09	-.31 §	-.45 §	-.18	-.28 §
Total	-.17	-.42 §	-.28 ‡	-.07	-.25 §

\* Relationships measured in terms of  $r$ 's estimated from phi-coefficients.

† Liberty is 52. A for four-company groups varies from 192 to 205.

‡ Corresponding chi-square significant at 5% level.

§ Corresponding chi-square significant at 1% level.

original companies throughout training. It was assumed that inclusion in the initial test data of men subsequently transferring out of the company would, so to speak, not give all men considered an equal opportunity to earn demerits.

As Table 35.4 shows, the relationships are again almost entirely negative, and in many cases significantly so, indicating that men receiving fewer choices tend more frequently to break the rules or at least to be caught and punished. Secondly, the "leader" and "mission" criteria are most consistently related to disciplinary offenses, although for all companies combined these correlations do not significantly exceed that for "liberty." Thirdly, no significant relationships are found in the first week, and one does not appear for the "leader" criterion until after the second week.

### Discussion and Further Analysis

The data thus far considered confirm the hypothesized relationship of sociometric status to Sick Bay attendance and disciplinary offenses, and show in addition certain variations in these relationships which make it worth while to attempt to elaborate hypotheses in somewhat greater detail. The question of status in relation to neuropsychiatric deviation remains an open one due to insufficient data and will not be dealt with specifically in the discussion which follows.

In attempting to account for the relation of such behavior as Sick Bay attendance or receiving demerits to group acceptance, it is obviously necessary to consider both the individual and the group situation. Figure 35.1 presents a simplified schema of some of the possible connections

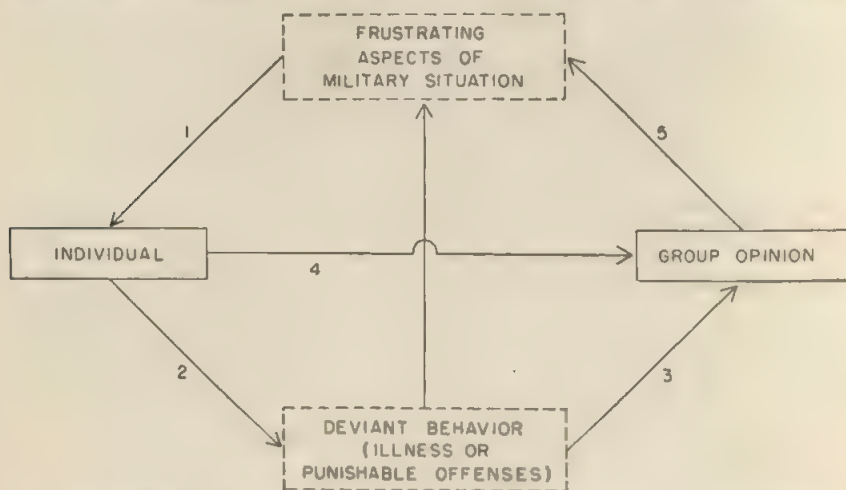


FIG. 35.1. Possible factors underlying relationships of status to such behavior as illness or disciplinary offenses. See text for explanation.

between these elements. It is assumed that illness or breaking rules represent reactions to the frustrating aspects of the military situation, reactions of a kind to which the individual's personality predisposes him. It is not contended, of course, that frustration alone accounts for all Sick Bay attendance or punished offenses, but only that it is a factor underlying the observed relationships, which are, after all, not very large. The relationship to group opinion may come about then in one or both of two ways. The frustrated individual may become ill or break the rules (Fig. 35.1, 1, 2), and this behavior may adversely affect group opinion (1, 3); or, while disposed to react in this fashion, he may also act in such a way in his contacts with his fellows as to affect group opinion directly



(1. 4). In either case, of course, changes in group opinion must depend upon the standards of judgment prevailing in the group and upon the kinds of situations, i.e., choice criteria, to which judgment is oriented. Finally, the individual's behavior may in turn affect his situation, either as a direct consequence of one of the frustration reactions under consideration (1. 6, e.g., being punished), or through the effects of his behavior on group opinion (11. 2, 3, 5 or 4, 5). These connections complete a potentially vicious circle, but it seems likely that this would in practice be interrupted by the individual's leaving the situation (e.g., through serious illness or court-martial), or by his inhibiting the undesirable reaction in the face of adverse group opinion or authority. In the latter event, adoption of some alternative mode of behavior might be expected.

Certain aspects of this general interpretation can be examined more closely in the light of the present data. With reference to the possibility of a direct effect of the individual's behavior upon group opinion (Fig. 35.1, 1. 4), the findings already presented suggest that this may hold true for Sick Bay attendance, since significant relationships with status were found in the first week (Table 35.2). However, 10 men in these companies

TABLE 35.5

RELATIONSHIPS BETWEEN SOCIOMETRIC STATUS AND SICK BAY ATTENDANCE IN THE FIRST WEEK  
(Companies 102-105)

	CHOICE CRITERION			
	Liberty	Mission	Leader	Total
All men ( $N = 224$ )	-.32 †	-.19	-.15	-.30 †
Men not attending Sick Bay before sociometric test ( $N = 214$ )	-.26 *	-.17	-.07	-.28 *

\* Corresponding chi-square significant at 5% level

† Corresponding chi-square significant at 1% level.

(102-105) had attended Sick Bay prior to this sociometric test, and they must be excluded if the hypothesis is to be tested conclusively. Table 35.5 shows the results of eliminating these men from the first-week analysis; the estimated  $r$ 's from Table 35.2 are included for comparison. As may be noted, the correlations are reduced slightly but not below acceptable levels of significance. In other words, men going to Sick Bay tend to achieve lower status before they go. Lower status may, of course, contribute a share of the frustration presumably resulting in eventual breakdown, but in any case this finding implies that the Sick Bay-prone individual tends to act in ways which result in nonacceptance by the group with reference to certain kinds of situations.

In the case of disciplinary offenses this kind of relationship again seems to be present, although it develops more slowly. As Table 35.4 indicates, significant correlations with status did not appear in the first week; but several did in the second week, and this despite the fact that no demerits had been given in these companies (98-101) before the sociometric test. Thus the behavior of demerits-prone individuals apparently tends to result in lower group acceptance in certain situations.

To test the additional possibility that Sick Bay attendance or receipt of demerits may in themselves affect group opinion is more difficult. The fact that some reduction may occur in the correlations with initial test status when men exhibiting deviant behavior prior to the test are eliminated from consideration (as in Table 35.5) does not answer the question, for these men very probably represent the more extreme forms of the personality constellations involved. An attempt has been made to get at this factor in the following manner. In the case of Sick Bay attendance for companies tested twice (94-105), all men were singled out who started and finished training in the same company, received no demerits throughout training, and did not go to Sick Bay before their initial sociometric test. Within this group, each man going to Sick Bay after the initial test was matched by a random procedure with another man from his company who did not attend Sick Bay, the matching being done on the basis of total choices received on the initial test. A comparable analysis, confined to men not going to Sick Bay during training, was carried out to ascertain the effects of disciplinary offenses subsequent to initial test. Table 35.6 shows the results of these analyses, which indicate that Sick

TABLE 35.6

FINAL STATUS OF MEN SHOWING DEVIANT BEHAVIOR AFTER INITIAL TEST, COMPARED WITH THAT OF MEN NOT SHOWING IT

	N	MEAN OF TOTAL CHOICES RECEIVED			t
		Initial	Final	Final Diff.	
Men not going to Sick Bay	34	11.53	13.76		
Men going to Sick Bay	34	11.79	14.68	-0.92	-0.38
Men not getting demerits	117	9.63	12.72		
Men getting demerits	117	9.67	9.56	3.16	2.36 *

\* Significant at 2% level.

Bay attendance has in itself no effect on status, but that disciplinary offenses are associated with a significant status decline or failure to improve. Negative results in this instance are perhaps more conclusive than positive. There is no way of determining whether the men receiving

demerits, although standing equally with the controls on the initial test, may not have subsequently encountered difficulties which altered their behavior in relation both to their fellows and to the regulations. Nevertheless, it seems likely that breaking regulations would in itself affect the individual's status. This point will be touched on again presently.

Consideration of the findings with respect to different choice criteria gives some further clues as to the bases of the group's reaction to the individual. It will be recalled that Sick Bay attendance was related most consistently to status on the "liberty" criterion and not related significantly to choices received as "leader"; whereas status on the "leader" and "mission" criteria showed the most consistent relationships to disciplinary offenses. This implies that the Sick Bay-prone individual tends to be accepted in the less personal, group-defined role of leader, but not in relatively closer, more personal relationships such as liberty companion.<sup>2</sup> (The role of mission companion presumably stands somewhere between these two extremes.) Since the recruits form a relatively homogeneous group within the larger population, their tastes in friends probably have much in common at the outset of training, and so it is not surprising to find the Sick Bay-"liberty" relationship as early as the first week.

Demerits-prone individuals, it appears on the other hand, tend to be less well accepted in both types of relationships, but more consistently so in the more impersonal, group-defined leadership role. This is also not surprising, perhaps, in groups which emphasize heavily authority and discipline. Now if the bases of judgment of the disciplinary offender consist in group norms of this sort, then it is reasonable to suppose that overt violations of the norms would in themselves tend to produce a negative group reaction, independently of other aspects of the individual's behavior. (See preceding discussion with reference to Table 35.6.) One wonders also whether these "other aspects," which seem to account for the demerits-status relationships observed prior to any official punishment, may not consist primarily in words or acts expressing opposition to authority. These considerations suggest that the late appearance of the demerits-status relationship may be due to either or both of two factors, time required for acquisition of group norms relative to leadership and discipline and time required to learn which men tend to fall short of these requirements.

In discussing disciplinary offenses, it has been assumed that the group's reaction to them would necessarily be negative, and the results obtained indicate that in general this is the case. Quite possibly, however, where resistance to authority becomes widespread within a group or subgroup, defiance of regulations will have the opposite effect on group opinion.

<sup>2</sup>The distinction suggested here is akin to that drawn by Jennings between the "psychegroup" and the "sociogroup" (3).

This may have accounted for some variation in the size of the observed relationships in different companies, but it has not been possible to find clear evidence of such an effect.

The data provide no very definite information concerning personality differences between men who go to Sick Bay and the disciplinary offenders. The findings with respect to different choice criteria suggest certain differences between these groups. And it is worthy of note that the two groups do not overlap greatly. Of 434 men in either or both groups who completed training in their original companies, only 98, or 23%, showed both forms of behavior. Or, stated in another way, the correlation between the two is .11. But further understanding of the personality factor, and of these relationships generally, obviously requires independent appraisals of the deviants' behavior, together with more information on the various other aspects of the situation.

### Summary

Sociometric tests were given to 16 companies of naval recruits, numbering about 60 men per company, at the end of their 10-week course of basic training; and to 12 of the companies, in blocks of four each, at the end of the first, second, and fifth weeks of training. The questionnaires requested nominations of liberty companion, co-volunteer on a dangerous mission, and company recruit leader. Status scores, representing number of choices received on each of these criteria, were examined in relation to records of neuropsychiatric disturbance, Sick Bay attendance, and disciplinary offenses. The findings indicate that:

1. Status within the company is in general related negatively and significantly to Sick Bay attendance and disciplinary offenses. A similar relationship seems to hold for neuropsychiatric cases, but they are too few to afford an adequate test.

2. Within the Sick Bay group no significant status differentiation appears between different diagnostic categories.

3. Sick Bay cases tend most consistently to be less acceptable as liberty companions (interpreted as representing a close, personal relationship) but are equally acceptable as leaders (interpreted as representing a less personal, group-defined role). Disciplinary offenders tend to be less acceptable in all situations, but more consistently as mission companions and leaders.

4. Status as a liberty companion relates significantly to Sick Bay attendance as early as the first week of training. Relationships of disciplinary offenses to status do not appear until the second week or later.

5. Committing a disciplinary offense appears in itself to affect group opinion, but this is not true of going to Sick Bay. In both cases other aspects of the deviants' behavior affect acceptance by the group.



A general interpretation is presented which accords with the observed results and calls attention to further kinds of observations necessary to adequate understanding of the individual-group relationships involved.

# REFERENCES

1. Eng, E., & French, R. L. The determination of sociometric status. *Sociometry* 1948, **11**, 368-371.
2. Jennings, H. H. *Leadership and isolation: A study of interpersonal relations*. New York: Longmans Green, 1943.
3. Jennings, H. H. Sociometric differentiation of the psychegroup and the sociogroup. *Sociometry*, 1947, **10**, 71-84.
4. Moreno, J. L. *Who shall survive?* Washington: Nervous and Mental Disease Publishing Co., 1934.



**Part Six**

**LEADERSHIP**





## 36

### Leadership: Introduction

Ask anyone you know what he thinks about group leadership and you will get ready answers. Nearly everybody has opinions about the general topic of leadership and evaluations of specific leaders. Even young children know what they think about the way their groups are led.

If you were to record what people say about leadership, you would get a list of statements something like the following:

**A group is only as strong as its leadership.**

A group without a leader is like a ship without a rudder.

The trouble with most groups is that just a few members run everything.

The trouble with most leaders is that they are too bossy.

Once a leader has shown that he is weak, he might as well quit.

A leader who delegates authority is shirking his responsibility.

A leader's main task should be to develop responsibility and initiative among the members.

In a good group you can't tell who the leader is.

If you want to be a leader, you must be ambitious, know what you want, and persevere.

To become a leader you must be sensitive to the needs of others and only ask them to do what they want to do anyway.

Leadership makes a good topic of conversation. Ideas are plentiful enough, and disagreements quickly arise. There is little popular consensus about what leadership is or what it should be.

The conflicting assumptions held by the man in the street have their counterpart among persons who have attempted to understand the phenomena of leadership in more scientific terms. Two major problems appear to have caused the most trouble. First, it has been found extremely difficult to disentangle assumptions about what leadership "ought to be" from research oriented questions of "what produces what." It has been only in very recent years that research on leadership has attempted to discover cause-and-effect relations regardless of their immediately practical or ideological significance. Even today much of the research is designed to provide empirical support for some particular ideological point of view. While it is true that such research can be of great value,

the social scientist who is motivated to do research in order to defend an ideology is almost certain to develop "blind spots" which prevent his seeing all the relevant facts.

The second problem consists of choosing an acceptable definition of the terms *leader* and *leadership*. To some, leadership is a property of a group while to others it is a characteristic of an individual. To those who emphasize the group, leadership may be synonymous with prestige, with the holding of an office, or with the performance of activities important to the group. To those who stress the individual, however, leadership may mean the possession of certain personality characteristics such as dominance, ego-control, aggressiveness, or freedom from paranoid tendencies, or it may even mean the possession of certain physical characteristics such as tallness or an impressive physiognomy.

### The Traits of Leaders

Much of the research on leadership has been concerned with the characteristics of leaders. Many studies have attempted to determine the physical, intellectual, or personality traits of the leader (usually the person holding an "office") as compared to the follower. It has been reported, for example, that leaders tend to be bigger (but not too much bigger) and brighter (but not too much brighter) than the rest of the members. Evidence has been found that well accepted leaders tend to display better adjustment on various personality tests. Other studies have concentrated more upon the leader's skills or what he does than upon the nature of his deeper personality. Findings from such studies indicate, for example, that leaders tend to give more information, ask for more information, and make more frequent interpretations about the situation than do the rest of the members.

On the basis of ideas and findings about the traits and behaviors of leaders, various attempts have been made to develop techniques for identifying persons who have the qualities seen as important for leadership. Many different selection procedures have been invented, ranging from paper-and-pencil tests to performance tests under lifelike conditions. The usefulness of all this work depends, of course, upon establishing some agreement about the nature of "good" leadership. Values must enter at this point. Among the values more commonly invoked in determining criteria of "good" leadership are high morale, high productivity, popularity, equalitarianism, and authoritarianism. In regard to such matters as popularity, group morale and productivity it has been possible to obtain quantitative measures and to demonstrate that certain kinds of leader behavior produce more of these valued properties than do others.

The development of procedures for selecting "good" leaders has gone

hand in hand with efforts to train leaders. To the extent that the characteristics found in "good" leaders can be instilled through training, it becomes possible through such means to increase the supply and quality of leaders in any group or institution. Great reliance is placed upon leadership training by organizations of all kinds, but little objective research has been undertaken to determine the effectiveness of such training.

On the whole, the attempt to discover the traits that distinguish leaders from nonleaders has been disappointing. Bird (2) made an extensive examination of the research relevant to this problem and was able to compile a long list of traits which in one or more studies appeared to differentiate leaders from nonleaders. The discouraging fact, however, was that only about 5% of the "discovered" traits were common to four or more investigations. A more recent survey of the literature by Stogdill (12) has produced only slightly more encouraging conclusions. He reports that various studies of the traits of leadership continue to result in contradictory findings. Among these studies the only conclusion that receives even fairly good support is that leaders excel nonleaders in intelligence, scholarship, dependability and responsibility, activity and social participation, and socio-economic status. A good summary of the inadequacies of the trait approach has been provided by Gouldner (5, 23-45).

One major reason for the disappointing outcome of this approach may be that personality traits are still poorly conceived and unreliably measured. As our knowledge about the nature of personality improves and as our techniques of measurement become more dependable, it is possible that traits will be discovered which do *regularly* distinguish leaders from followers. It must be noted, however, that although this is a possibility which cannot be definitely rejected, the available evidence does not make it appear very probable.

Investigators in this field are generally coming to the conclusion that certain minimal abilities may be required of all leaders, but that these will also be widely distributed among nonleaders. Furthermore, the traits of the leader which seem to be necessary and effective in one group or situation may be quite different from those of another leader in a different setting. This conclusion, if adequately substantiated, would have implications for the way in which leaders should be selected and trained. It would also raise questions about the desirability of formal arrangements which maintain the responsibilities of leadership in the same person regardless of the changing tasks of the group.

This "new view" of leadership stresses flexibility. Groups are (or should be) flexible in assigning leadership functions to various members as conditions change. Effective leaders are sensitive to the changing conditions of their groups and flexible in adapting their behavior to new

requirements. Procedures for selecting and training leaders emphasize, accordingly, such characteristics as "sensitivity" and "readiness to take on or give up responsibilities in response to changing conditions."

### Leadership and Group Functions

Dissatisfaction with the trait approach has given rise to a view of leadership which stresses the characteristics of the group and the situation in which it exists. Research conducted within this orientation does not attempt to find certain invariant traits of leaders. Rather, it seeks to discover what actions are required by groups under various conditions if they are to achieve their objectives, and how different group members take part in these group actions. Leadership is viewed as the performance of those acts which help the group achieve its objectives. Such acts may be termed *group functions*. More specifically, then, leadership consists of such actions by group members as those which aid in setting group goals, moving the group toward its goals, improving the quality of the interactions among the members, building the cohesiveness of the group, or making resources available to the group. In principle, leadership may be performed by one or many members of the group.

This point of view has been stressed by many writers including Barnard (1), Cattell (Chap. 2), French (3), Gibb (4), Likert (8), Lippitt (9), Redl (11), and Stogdill (Chap. 4). The common denominator among these theorists includes the following points: Groups differ from one another in a variety of ways, and the actions required for the achievement of the objectives of one group may be quite different from those of another. The nature of leadership and the traits of leaders will accordingly be different from group to group. Situational aspects such as the nature of the group's goals, the structure of the group, the attitudes or needs of the members, and the expectations placed upon the group by its external environment, help to determine which group functions will be needed at any given time and who among the members will perform them.

#### *What Are Leadership Functions?*

Nearly every conception of leadership contains the notion that a true leader exerts more influence on the group and its activities than does the average member. There is less clear-cut agreement, however, concerning the specific kinds of influence which are uniquely those of leadership. Cattell (Chap. 2) has proposed what is perhaps the most inclusive conception when he asserts that any member of a group exerts leadership to the extent that the properties of the group (syntality) are modified by his



presence in the group.<sup>1</sup> According to this view all group functions (i.e., all member actions which help the group achieve its objectives) are leadership functions. Although this conception is much broader than most popular notions of leadership, it has distinct theoretical advantages. One of the most important of these is that leadership is conceived as a quantity which a person may display in varying degree rather than something that he either has completely or does not have at all. Similarly, leadership may be possessed to some degree by any member of the group regardless of his formally designated office or position. In keeping with this definition of leadership it would be rare indeed that one could properly speak of "the leader" of a group.

Some theorists prefer to stay closer to the popular notion of leadership and to restrict the term to include the performance of a more limited set of group functions, such as those of planning, decision-making, or coordinating. This approach maintains the essentially functional conception of leadership, but it uses the word *leadership* to refer to a special class of functions. The only serious difficulty with this procedure is that little agreement has yet been achieved concerning which group functions are and which are not proper instances of leadership.

Krech and Crutchfield (7, 417-422) have listed 14 functions which a leader may perform. They propose that a leader is a person who serves to some degree as an executive, planner, policy maker, expert, external group representative, controller of internal relationships, purveyor of rewards and punishments, arbitrator, exemplar, group symbol, surrogate for individual responsibility, ideologist, father figure, or scapegoat. Redl (11), writing in the psychoanalytic tradition, has proposed a rather different list of functions which affect mainly the group's formation, maintenance, and disruption. These functions are conceived as operating through such mechanisms as identification, cathexis, guilt reduction, impulse control, and incorporation of superego.

It is not possible at the present stage of research on groups to develop a fully satisfactory designation of those group functions which are peculiarly functions of leadership. A more promising endeavor, at least for the present, is to identify the various group functions, without deciding finally whether or not to label each specifically as a function of leadership, and then to discover by empirical investigation such things as what determines their distribution within the group and what consequences stem from various distributions among members.

The concept of group (or leadership) function contains two important

<sup>1</sup> Cattell includes both positive and negative influences under the concept of leadership. In the discussion here, however, we shall consider only influences which in some sense "help" the group.

ideas. We noted the first of these above when we pointed out that, in principle, any member of a group may be a leader in the sense that he may take actions which serve group functions. The second idea is that a given function may be served by many different behaviors. According to this conception, then, one and the same leadership function may be served by a variety of actions taken by a variety of people. It is the task of research to discover the factors that determine what actions are performed by which members of the group.

Under specific circumstances, of course, any given behavior may or may not serve a group function. The behavior, "makes expert information available to the group," which might be expected to help the group reach a goal, can be carried out in such a manner that it stultifies movement toward the goal. To cite another example of usually helpful behavior, a group of children may be stimulated to self-direction at a time when they are not ready for it and when a more appropriate action would be to suggest a plan of action. Or clowning by a member of a discussion group may be exactly what is needed in a tense moment to relieve strain, but at another time such levity may seem inappropriate or it may even block locomotion to the goal.

In a similar way we may conclude that the skills possessed by a designated leader, or the holder of an "office of leadership," may make him well qualified to perform important group functions under certain conditions and poorly qualified under others. The pilot of a bomber crew, for example, who is an excellent leader for the group while the plane is in the air, may be a most inadequate leader if the plane crashes and the crew is faced with the task of surviving or finding its way to safety. The behavior required in directing flight operations is not necessarily the same as that required when the crew is in trouble on the ground. The specific requirements of the group's tasks demand that members possess certain skills in order to serve the appropriate functions. If the task changes, different behaviors are required, and the same person may or may not be able to perform in the new way.

In Chapter 37, Carter and his associates report experimental findings which indicate that the behavior shown by designated leaders does vary somewhat depending upon the nature of the group task. In this experiment groups were given three different types of assignments: reasoning, mechanical assembly, and group discussion. When confronted with the reasoning task the designated leader more frequently asked for information or facts. When the group was working on mechanical assembly, he was more apt to express the desire that something be done and to work actively with the men. In a discussion group he was more likely to give information and to ask for expressions of opinion. These investigators conclude that the goal or task of the group exercises influence upon the

nature of the leadership behavior that arises. Much more research is needed, however, to determine more precisely what sorts of goals bring about what kinds of leadership behavior and how they exert this influence.

Just as the nature of the group task influences the kinds of leadership behavior that arise in a group, so should we expect the specific needs for group maintenance to influence leadership behavior. If a group's existence is threatened by conflicting subgroups, we might expect a leading person to engage heavily in mediating behavior. If, on the other hand, the group's problem is that it has such low prestige in the community that members are leaving, quite different leader activities would be expected. It is unfortunate that most of the carefully controlled studies of leader behavior have been conducted with temporarily organized groups where, almost of necessity, members are not concerned with the preservation of the group.

Although we know little of a systematic kind about the processes involved, it is apparent that the nature of the leadership behavior chosen for the performance of group functions will be influenced by situational factors both inside and outside the group.

### *Two Basic Types of Group Functions*

It will be useful for many purposes to distinguish among various group functions according to the type of group objective to which the function contributes. It appears that most, or perhaps all, group objectives can be subsumed under one of two headings: (a) the achievement of some specific group goal, or (b) the maintenance or strengthening of the group itself. Examples of member behaviors that serve functions of *goal achievement* are "initiates action," "keeps members' attention on the goal," "clarifies the issue," "develops a procedural plan," "evaluates the quality of work done," and "makes expert information available." Examples of behaviors that serve functions of *group maintenance* are "keeps interpersonal relations pleasant," "arbitrates disputes," "provides encouragement," "gives the minority a chance to be heard," "stimulates self-direction," and "increases the interdependence among members."

Any given behavior in a group may have significance both for goal achievement and for maintenance. Both may be served simultaneously by the actions of a member, or one may be served at the expense of the other. Thus, a member who helps a group to work cooperatively on a difficult problem may quite inadvertently also help it to develop solidarity. In another group, however, an eager member may spur the group on in such a way that frictions develop among the members, and even though the goal is achieved efficiently, the continued existence of the group is seriously endangered.

It has often been asserted that groups display a tendency to preserve themselves whenever they encounter a threat to their existence. Such a threat, so the argument goes, makes the group maintenance functions especially valuable to the group, and some person will spring to the rescue and assume the responsibilities of leadership by serving these needed functions. That this is an invariable "law of leadership" may be doubted. Nevertheless, it does appear that many groups do have tendencies toward self-preservation. When the existence of such a group is in jeopardy, member behavior is apt to arise which will strengthen the group's cohesiveness and resources. To the extent that these efforts are effective, they are by definition group functions, and most people would agree that these should also be called functions of leadership.

By similar reasoning we should expect goal achievement functions to become more valuable to the group when it accepts an important goal or when goal achievement is threatened. Under such conditions we might expect a heightened tendency for one or more members to perform acts designed to help the group achieve its goal. If one person does devote unusually great effort toward this end, or if he is especially effective in aiding the group, it would generally be agreed that he is performing functions of leadership regardless of his office in the group. Although systematic evidence is meager, Gibb's findings (4) lend support to this point of view. He reports that leadership activity occurred most frequently in the groups he studied when these groups were faced with a problem.

Countering the notion that groups invariably attempt to preserve themselves is the practical experience with groups which suggests that a "group pathology" may sometimes develop in which member behavior persistently does not contribute to the group's goal achievement or maintenance. Under some circumstances, a group may appear deliberately to escape from its problems by retreating to some relatively simple activity. In a problem-solving discussion group, for example, when the solution is difficult or when interpersonal conflict is intense, great energy may be devoted to the "safe" activity of listing on the blackboard all logical possibilities of action. Hours may be spent discussing whether a particular item falls under one heading or another, even though the decision will not bring the group any closer to its goal. It is extremely difficult, of course, to determine definitely whether or not such escape behavior is making an actual contribution to the maintenance of the group, since the avoidance of tension and conflict may sometimes be necessary for the preservation of the group. If, however, a group remains indefinitely on "dead center," neither improving its abilities and resources nor moving toward a goal, we may conclude that virtually no group functions (and consequently no leadership functions) are being performed.



### *The Distribution of Functions among Members*

The conception of leadership proposed here implies that important group functions may, in principle, be distributed in many ways among the members of a group. Most groups, however, soon arrive at one distribution which is more or less explicitly recognized by all members. Certain functions are assigned to certain individuals, and the other members are forbidden to perform them. Members of a football team, for example, may be required to listen to the quarterback and to offer no advice in the huddle. Many formal organizations make it plain in a multitude of ways that individuals located in the lower ranks are not expected to contribute to the planning activities of the organization. Similarly, decision-making is often restricted to a few "key" people.

In some groups, the members are expected to take over as much of the responsibility for leadership functions as conditions will allow. At the other extreme, groups may concentrate all leadership functions in one person and punish any member who appears to want to usurp any of these functions. What are the consequences of restricting the functions of leadership to a few roles in the group? What are the results of distributing them more widely? These are questions that have stimulated much debate, but few answers can be supported by indisputable facts. There are those who believe that greater efficiency results when all leadership functions are concentrated in a few roles—the leaders. They maintain that "too many cooks spoil the broth." And there is much reasonableness in the argument that if everyone has a final "say" in running the group, chaos will result unless all want to "say" the same thing. On the other hand, it is argued that the concentration of leadership functions in the hands of a few undermines the motivation of the rest, thus destroying enthusiasm, morale, and creativity, and engendering conflicts and hostility between leaders and followers.

There is undoubtedly some justification for each position. Bavelas (Chap. 33) reports that when experimental groups are working on certain tasks, the concentration of leadership functions results both in more efficient group performance and lower morale. It should be noted, however, that in these experiments the groups did not exist long enough for any demoralizing effects to show up in reduced efficiency. The work reported by Kahn and Katz (Chap. 41) also indicates that the concentration of functions may have mixed results. They found, for example, that high producing groups in business and industry tend to have supervisors who take responsibility for several of the functions of leadership (such as planning, providing materials, and coordinating), but the supervisors of these productive groups also are more inclined to delegate responsibilities

to others in the group and to encourage members to make decisions and take initiative in many activities.

This same issue is often raised on more ideological or ethical grounds. Many writers have insisted that group procedures are more democratic if the functions of leadership are widely shared. Others have replied, however, that the essence of democracy is not the wide distribution of leadership functions, but rather the fact that groups are allowed to assign and reassign leadership functions without arbitrary dictation. We shall not engage here in this debate over the meaning of democracy. Important empirical findings are available, however, in the studies reported by White and Lippitt (Chap. 40), Preston and Heintz (Chap. 39), Bovard (Chap. 14), Coch and French (Chap. 19), and Levine and Butler (Chap. 20). All of the leaders in these experiments were externally imposed upon the group, but even so those leaders who tended to distribute the functions of leadership more widely obtained group performances generally regarded as "better" in our society. When production was measured, it was higher. When interpersonal affect was measured, it was more friendly. And when cohesiveness was measured, it was stronger.

In order to clarify this issue further, it will be necessary to rephrase the question. Rather than ask, "How much concentration should there be?" we should ask, "What things result when functions are combined in certain ways under specified circumstances?" Then we shall almost certainly conclude that different degrees of concentration are required for the accomplishment of different purposes under different circumstances.

### *What Determines the Distribution of Functions?*

Quite apart from any scientific evidence concerning the most desirable distribution of leadership functions, all groups do come to distribute these functions among the members in some particular way. It is an important problem for the student of group dynamics to discover what things determine the assignment of leadership functions.

Let us begin with a broad distinction between groups where the distribution of leadership functions is imposed upon the members and those in which the members determine these matters for themselves. Although "pure" cases of either type will be found only rarely, the distinction is a useful one. In a formal organization such as a military establishment or an industrial concern, leadership functions are usually specified as a part of the definition of each job. Each position in the table of organization is granted the authority to exercise certain functions and prevented from engaging in others. For most, or even all, of the members of the organization, the distribution of functions is imposed and must be accepted as a part of belonging. On the other hand, self-determination of

the distribution of functions is more common in informal groups and under circumstances where a firm tradition has not become established. But even informal groups may become so rigidly structured that the functions associated with various positions remain fixed over a long period of time with the result that an entirely new membership may be employing a distribution of functions established by other people. There is relatively little empirical evidence concerning the different consequences stemming from these two ways of distributing functions. However, it would appear reasonable, but by no means necessarily true, that a self-determined distribution would be more flexible and more in keeping with the needs of the members.

When leadership functions are explicitly associated with "offices" in a group, there is of course a tendency for the person occupying a given position to perform the corresponding functions. Under these conditions it is clear who is accountable for the group's success or failure, and rewards and punishments for the performance of group functions may be readily managed. We may raise the question, however, as to what happens when important functions are improperly assigned or not performed by the designated individuals. In the study reported by Carter and his colleagues (Chap. 37) it was found that designated leaders did ordinarily provide leadership functions for the group, but when they did not, some other member was likely to come to the group's rescue. Heyns (6) reports similar results in an experiment where the designated leader deliberately failed to perform certain needed functions. Further evidence is provided by the study of Kahn and Katz (Chap. 41) in which it was found that informal leaders tended to spring up in groups where the foreman failed to provide adequate leadership.

When the distribution of leadership functions is allowed to develop naturally without external imposition, certain properties of the group setting appear to influence the type of distribution that results. The channels of communication within the group, for example, make it likely that certain people will assume responsibility for certain functions. The studies reported by Bavelas (Chap. 33) illustrate this point rather dramatically. Under the experimental conditions established there it was found that certain important functions tended to be served by people occupying more central positions in the communication network. In a similar way it may be expected that the geographical location of offices in a building or the arrangement of houses in a neighborhood will influence the spontaneous assignment of functions to group members. The possession of resources needed by the group may also be expected to exert a similar influence. Thus, the boy with the baseball and bat has a better than average chance to become captain of the team. Or the mother whose children are grown may have more time to devote to a community or-

ganization and consequently assume more of the leadership functions.

We have already seen, in our examination of the trait approach to the study of leadership, how difficult it is to demonstrate that any specific traits of individuals are uniquely and invariably associated with leadership. A very good possibility does remain, however, that the possession of certain personality characteristics heightens the probability that an individual will be assigned specific functions of leadership. When specialized skills are required to fulfill a given function, the case is usually clear. Thus, a person who is sensitive to problems of human relations is often sought to perform the personnel functions of a business organization. Or an unexcitable person spontaneously serves as mediator in a discussion group. Much more research is needed, however, before we can establish dependable relations between specific personality characteristics and the performance of specific functions.

One aspect of human motivation has been so often cited as a determinant of assumption of leadership that it deserves special consideration. It has been frequently observed that a "hunger for power" brings people to assume the functions of leadership. Some people, it seems, derive important satisfactions from "running things." Carter *et al.* report (Chap. 37) that persons who emerged as leaders in leaderless groups tended to be more aggressive, forceful, and dominating in their behavior than were appointed leaders under comparable conditions. It would seem probable that the emergent leaders possessed a stronger need for power and found the leaderless group an ideal opportunity to gratify this need. In many cases, of course, it is possible for a "power grabber" to help a group achieve its goals and maintain itself and thus perform leadership functions. It is also possible, however, that when an individual's major motivation is the possession of power, his behavior will serve mainly to satisfy his own needs without contributing to the group's locomotion or maintenance. In such a case he displays what Fouriezos, Hutt, and Guetzkow (Chap. 24) call *self-oriented behavior*.

In contrast to the needs of the "power grabber," there appears to be another syndrome of motivation in which the individual is readily able to accept the group goals and to assume responsibilities. Such conscientious members are commonly found in groups, and their behavior makes it clear that they are not satisfying any strong need for personal power, but hope instead to live up to their image of a good group member. Although little is known about the nature of this kind of motivation and about its origins, an experiment by Pepitone (10) has demonstrated some of its aspects. In this experiment she told certain group members that their job was more important to the group than were the jobs assigned to others. (In reality all members had identical work assignments, though they did not know this.) She found that those who felt that their assign-



ment was more important developed greater feelings of responsibility to the group and were more ready to devote energy to the group. Apparently a feeling of worth and acceptance by the group stimulates a readiness to perform functions needed by the group.

The needs and attitudes of those who do *not* assume functions of leadership constitute yet another influence upon the distribution of these functions. It is the experience of many adult leaders of youth groups that the less mature members avoid accepting responsibility by asking the adult leader to make decisions for them. If the adult leader finds personal satisfaction in having others dependent upon him, a sort of unconscious "collusion" may develop in which members and leader both gain a sort of satisfaction out of the concentration of functions in the hands of the leader. The Freudian concept of the leader as a father with whom the group members identify and on whom they depend applies in many instances to adult groups with equal vividness. When, for whatever reason, members display a marked degree of dependence, there is a strong tendency for the functions of leadership to become concentrated in one strong "father" of the group. Scheidlinger (Chap. 5) has described some of the complexities of the needs for dependence and independence and the ways they affect group life. These emotionally laden, and often unconscious, determinants of behavior are hard to observe objectively and even more difficult to measure. Evidence concerning the precise way in which they influence group life has consequently remained primarily anecdotal.

### Overview of Research Reported in This Section

It should be apparent from the preceding discussion that the problem of leadership cannot be sharply separated from many other problems of group functioning. All the previous sections of this volume have contained material relevant to the topic of leadership. In this section we have selected five papers which focus directly upon the twin tasks of describing leader behavior and of discovering the consequences of different syndromes of leadership.

In Chapter 37, Carter, Hawthorn, Shriver, and Lanzetta report an attempt to record the actual behavior of group members "in such a fashion as to allow definitive statements regarding the activities of one member relative to those of other members." Using a standardized scheme of observation, they recorded the behavior of members in groups with a designated leader and without. They found that certain kinds of behavior were more typical of leaders while other kinds were displayed more by ordinary members. The authors conclude that the unique behavior of leaders is concerned with (*a*) analyzing the situation and (*b*) initiating action required. They found, in addition, that the actions of designated

leaders were not exactly the same as those of leaders who emerged from the groups to take over leadership. These latter tended to be more aggressive and "authoritarian" than the designated leaders. Finally, they note that the behavior which characterized leaders was somewhat different depending upon the nature of the group task. The relatively small concern of leaders in these groups with problems of group maintenance might be expected from the fact that the groups were formed solely for purposes of experimentation and were not expected to endure.

In Chapter 38, Maier and Solem compare the problem-solving proficiency of groups with designated leaders and those without such a leader. In this experiment the designated leaders had been given brief training in techniques of conducting group discussions. Those groups with a trained discussion leader were found to be more accurate in solving a standard problem than were those without an assigned leader. The findings are interpreted to support the theory that the group with the trained leader is superior in the quality of its thinking because the leader helps the group make effective use of minority opinions. In the "leaderless" groups, in contrast, pressures to conform to the majority opinion and to ignore the minority often led the group to incorrect solutions even when some members of the group had the correct answers.

The effects of two contrasting styles of leadership are examined in Chapter 39 by Preston and Heintz. These investigators briefly trained a number of leaders to be *participatory* discussion chairmen and an equal number to be *supervisory*. The participatory leaders attempted to create a free atmosphere, to encourage the expression of opinions from all members, but not to impose their own opinions on the group. The supervisory leaders, in contrast, remained more aloof and had responsibility for managing the procedures of group discussion. Prior to the group discussion each member secretly ranked a number of prominent political figures according to his preference as President of the United States. The group discussion which followed some hours later was concerned with the same task of ranking the names. After the group had made its decision, the individual members again made their own secret rankings. The results indicate that the participatory style of leadership was more effective than the supervisory style in creating changes in attitudes. Members of groups with participatory leadership were also more satisfied with the meetings, more interested in the task, found the groups more friendly and enjoyable, and were more productive.

The experimental study reported in Chapter 40 by White and Lippitt has now become a classic. It has added great impetus to the functional approach to leadership and has served to stimulate much of the recent research in this field. The leaders in this investigation were not peers of the group members but were adult leaders of youth groups. They were

trained to be capable autocratic, democratic, or laissez-faire leaders. Each leader was skilled in all three styles of leadership and led a number of meetings while using each method. In the laissez-faire groups the leader deliberately attempted to perform a minimum of the functions of leadership. In the autocratic groups he held to himself as many of the functions as possible. In the democratic groups he played an active role, but made efforts to spread the functions of planning and decision-making as widely as possible. The behavior of the leaders and of all the members was carefully observed and recorded in quantitative terms. The results show clearly that the different types of leadership were reflected in distinctly different patterns of leader behavior. Furthermore, the behavior of the group members differed markedly under the different types of leadership. Both group solidarity and group productivity differed markedly, and a characteristic emotional atmosphere developed in each group.

These studies offer assurance that the effect of leadership behavior can be identified and that these behaviors may be manipulated in experimental situations. Furthermore, they indicate that the presence or absence of certain leadership behavior may have predictable consequences for the group.

In the final study in this section, Kahn and Katz (Chap. 41) describe research conducted in business and industry in which they seek to identify the characteristics of the supervisors who lead productive, in contrast to less productive, crews. They find that "good" foremen (both in terms of group productivity and morale) tend to take a differentiated role of leadership, to delegate authority, to be more "employee oriented," and to develop group pride and cohesiveness. These behaviors by the better supervisors appear to serve the two broad functions of leadership outlined above in that they are all designed to help the group achieve its goals and maintain itself as a group. Apparently the good supervisors possess both the technological skills needed to perform the group tasks and the ability to help the members satisfy the needs that are important to them. The work reported by Kahn and Katz demonstrates that it is possible to identify different styles of leadership in ongoing institutions and to determine the consequences of each style. Although the settings of the research are quite different from the laboratory experiments reported in this section, these field studies yield quite consistent findings.

The reaction one derives from the work reported here is one of optimism and encouragement. Though leadership is a confusing and complicated concept, a beginning has clearly been made in isolating some of its major components. As our understanding of the nature of these phenomena is advanced, the practical problems of improving group life will be more readily solved. An excellent beginning has been made toward settling ideological arguments about how leaders should behave.

When the consequences of different leadership procedures can be regularly predicted, then those procedures may be chosen which best lead to preferred consequences. Finally, it is becoming evident that problems of leadership cannot be safely separated from problems of membership. As our understanding of the nature of groups becomes broadened, the mystery of leadership disappears.

#### REFERENCES

1. Barnard, C. I. *Functions of the executive*. Cambridge: Harvard Univ. Press, 1938.
2. Bird, C. *Social psychology*. New York: Appleton-Century, 1940.
3. French, R. L. Morale and leadership. In *Human factors in undersea warfare*. Washington: National Research Council, 1949.
4. Gibb, C. The principles and traits of leadership. *Journal of Abnormal and Social Psychology*, 1947, **42**, 267-284.
5. Gouldner, A. W. (Ed.) *Studies in leadership*. New York: Harper, 1950.
6. Heyns, R. R. Effects of variation in leadership on participant behavior in discussion groups. Unpublished doctor's dissertation, Univ. of Michigan, 1948.
7. Krech, D., & Crutchfield, R. S. *Theory and problems of social psychology*. New York: McGraw-Hill, 1948.
8. Likert, R. Motivational dimensions of administration. In R. A. Walker (Ed.), *America's manpower crisis*. Chicago: Public Administration Service, 1952.
9. Lippitt, R. An experimental study of authoritarian and democratic group atmospheres. *University of Iowa Studies in Child Welfare*, 1940, **16**, No. 3, 43-195.
10. Pepitone, Emmy A. Responsibility to the group and its effects on the performance of members. Unpublished doctor's dissertation, Univ. of Michigan, 1952.
11. Redl, F. Group emotion and leadership. *Psychiatry*, 1942, **5**, 573-596.
12. Stogdill, R. M. Personal factors associated with leadership: A survey of the literature. *Journal of Psychology*, 1948, **25**, 35-71.



## The Behavior of Leaders and Other Group Members

Launor Carter, William Haythorn, Beatrice Shriver, and  
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The psychological literature is replete with lists of behaviors or traits which purport to characterize leaders. *Psychology for the Armed Services* (4) has a section on "The Attributes of Leadership," which suggests that a leader exercises authority, is competent, industrious, confident, responsible, etc. Bird (3) reviewed "approximately twenty inquiries bearing some resemblance to controlled investigations" and compiled a list of 79 traits which were said to characterize the behavior of leaders. As he points out, "surprisingly little overlapping is found from study to study."

More recently there have been careful investigations attempting to characterize the followers' opinions regarding typical leadership behavior. Notable among these studies are those of Hemphill (9), Roff (13), and Sanford (14). In each of these studies respondents were asked to describe things leaders did or, as in part of Sanford's study, the things that leaders should do. While such reports are very useful in giving the non-leaders' perceptions of what they think leaders do or should do, they may not adequately represent the actual behavior of the leaders on which the respondents are reporting. This problem seems particularly acute in those studies in which information was collected some months after the respondents had left the groups on which they were reporting. It would at least seem reasonable that these results include a mixture of actual behavior, the respondents' rationalizations regarding the behavior, and cultural stereotypes of good and poor leadership.

There have been surprisingly few attempts to describe the behavior exhibited by persons in a group setting by direct observation with immediate recording. Parten (12) and Murphy (11) have made such observations

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on young children, and more recently Bales (1) has given a more detailed characterization of the activities of the members of one group of five persons. Lippitt (10) has presented some data showing the relative contributions of leader and delegate in a discussion group, but uses only very molar descriptive categories. As far as is known, there is no detailed description of the actual behavior of group members obtained in such a fashion as to allow definitive statements regarding the activities of one member relative to those of other members. This study reports such results. Lest there be misunderstanding, it should be emphasized that the particular results obtained are certainly not characteristics of leaders in all situations or for groups of any size. They are thought to be characteristic of individuals working in small homogeneous groups on tasks similar to those described.

### Procedure

The subjects were 40 NROTC junior students. By means of sociometric measures of friendship and leadership, the subjects were formed into five groups of eight with as equal leadership potential and as low mutual friendship ratings as possible. Each of these groups of eight was then run in a leaderless group session on three tasks: reasoning, mechanical assembly, and discussion. The tasks are described in some detail in a previous publication (5). On the basis of leadership ratings based on this performance, each group was broken into two smaller groups of four, selected so that each group would have an approximately equal distribution of leadership ability. These groups of four were then run on three similar tasks. In the results this group will be referred to as working in "the emergent situation."<sup>1</sup> At the second meeting of the group one member had been withdrawn and replaced by an individual having a similar leadership rating but from another group. This new individual was appointed as the leader in the presence of the other three group members.

While the subjects were working on the tasks, they were observed through one-way mirrors by two independent observers who classified their behavior in terms of a coding system involving 53 categories. This system and the categories are described in detail elsewhere (6). At the completion of each task, the observers rated each of the subjects on a seven-point rating scale on a number of characteristics, including leadership. The reliability of the ratings and categorizations is generally adequate and is fully presented in (7).

<sup>1</sup> "Emergent situation" refers to what has been frequently called the "leaderless situation." It is felt that "emergent" is more appropriate, since "leaderless" connotes a lack of leadership whereas in our groups a leader usually emerged.

## Results and Discussion

Since one of the major comparisons to be made is between leaders and other group members, it is important to define carefully how the subjects designated as the leaders were selected. In the case of groups working in the appointed situation, the subject appointed as the leader is considered the leader. In certain of these groups, the individual who was appointed was not the real or functional leader in the sense that some other person in the group was rated as the more effective group leader. However, an analysis of the ratings made by the observers shows that the average leadership ratings of the appointed leaders were significantly higher than the average rating of the remaining group members. (The difference was significant at past the .01 level for reasoning, at .02 for mechanical assembly, and at .02 for discussion.) The average ratings of the appointed leader and those of the best other leader in the group are essentially the same with all the *t*s being less than 1.

In the case of groups working in the emergent situation, the leaders were determined by selecting the individual in each group who received the highest leadership rating from the group observers. There is some problem of circularity in the treatment of our results for these leaders, although we believe it to be largely mitigated. The observers categorized the subjects' behaviors into a continuous ongoing record; for a typical group this might involve some 2-300 categorizations per task. Before these categorizations were even transcribed, the ratings were made by the observers. Thus the ratings are based on over-all, global impressions of performance, not on a consideration of the detailed categorizations.

The subjects we have called the "leaders" are simply the individuals so designated in the appointed situation or the individuals receiving the highest ratings in the emergent situation. The problem is: What do such leaders do which differentiates them from the other group members?

The results for the appointed situation are based on an analysis of the complete records for 10 groups. Thus, throughout the analyses the comparison is between 10 leaders and 30 other group members. For the emergent situation, the comparisons are for 8 leaders and 21 others on the reasoning task, for 7 leaders and 21 others on the mechanical assembly task, and 9 leaders and 36 others on the discussion task. While more groups were run in the emergent situation, defective tape recordings reduced the number of cases on which complete data were available. (Incidentally, the use of modified Stenographs (6) has almost completely eliminated defective records and is less expensive.) Levels of significance throughout this paper are based on *t*s calculated from the distribution of frequencies for a particular category attributable to each individual with

Ns as indicated above. Thus where significant differences are indicated they were conservatively determined, and the number of degrees of freedom is not inflated by considering each act as the base unit for analysis.

Since there were 53 categories, three work tasks, two types of situations and the totals analyzed, there were 324 possible comparisons. Of these possible comparisons, 159, or about half, were automatically eliminated because of the very small number of behaviors falling in these categories. It was arbitrarily decided that no category would be considered unless there was an average of at least one such behavior per task-session. As Bales (1) points out, an act such as a bald command or a crucial insight may happen only once and yet be most important in determining a long sequence of action. Even so, we as yet have no adequate way of handling behavior which occurs with such small frequency.

Of the 165 actual comparisons made, the leader's behavior differed from that of the other group members with a frequency which was significant at the 1% level or beyond in 34 comparisons, at the 2-5% level in eight cases, and at the 6-10% level in 12 comparisons. Table 37.1 shows the average number of behaviors falling in any category (col. 1 for each task), the percentage of such behavior attributable to the leader (col. 2), and the percentage attributable to the average of the other three group members (col. 3). This table includes only the categories for which at least one of the six possible comparisons was significant at the 10% level or better. In other words, there were only 20 categories in which any significant differences occurred when as liberal a criterion as the 10% level of significance is used. There were 10 categories which had less than an average of one behavior per task for any task and 23 other categories in which there was considerable behavior recorded, but where there were no appreciable differences between the leaders and others. In other words, there is a considerable number of categories, probably well over one-half, in which the leader's behavior does not differ significantly from that of the other members of the group. The exact nature of this similar behavior will be considered later.

First let us consider the kinds of behavior which seem to differentiate leaders from the other group members over all the tasks and group situations. Category 23, "diagnoses situation—makes interpretation," and category 50, "gives information on carrying out action," are the only two categories in which the leader consistently shows a statistically significant different level of activity from the other group members. Thus, the type of behavior which characterizes the leader, whether he is appointed or emerges, without regard to the task involved, is the making of interpretations about the situation and giving information on how to carry out the activity. There are other items which also seem to be similarly related although they do not always reach acceptable levels of statistical signif-



TABLE 37.1

BEHAVIOR OF GROUP MEMBERS WHICH DIFFERENTIATES LEADER FROM OTHERS

CATEGORY	LEADERSHIP SITUATION	REASONING			MECHANICAL ASSEMBLY			DISCUSSION		
		No. Behaviors in Av. Session	Per Cent Attributable to Leader	Av. Per Cent Attributable to Non-Leaders	No. Behaviors in Av. Session	Per Cent Attributable to Leader	Av. Per Cent Attributable to Non-Leaders	No. Behaviors in Av. Session	Per Cent Attributable to Leader	Av. Per Cent Attributable to Non-Leaders
21. Calls for attention	Appt. Emerg.	2.3 5.0	27 49	24 17 *	1.1 2.9	23 25	26 25			
22. Asks for information	Appt. Emerg.	39.6 43.8	43 30	19 † 23 †	11.2 6.3	26 34	25 22	7.8 6.4	33 28	22 24
23. Diagnoses situation	Appt. Emerg.	38.4 39.2	35 36	22 † 21 †	32.8 27.9	37 35	21 † 22 †	10.2 9.8	47 43	18 † 19 †
24. Asks for expression of opinion	Appt. Emerg.	4.2 1.3	53 38	16 † 21	1.0	26	25	6.7 11.8	46 41	18 † 20 †
26. Proposes course of action for others	Appt. Emerg.	8.4 8.8	45 45	18 † 18 †	10.6 10.1	36 43	21 * 19 †	6.0 6.2	37 59	21 14 †
27. Supports his proposal	Appt. Emerg.	2.3 2.3	30 31	23 23	2.2	47	18 †	30.1 30.8	18 46	27 18 †
28. Defends his proposal from attack	Appt. Emerg.	1.5 1.8	37 39	21 20	1.0	47	18 *	6.0 8.5	14 36	29 21 *
29. Initiates action	Appt. Emerg.	4.5 2.5	66 33	11 † 22	3.0 4.7	45 39	18 † 20 †	1.2 2.3	64 36	12 † 21
31. Agrees or approves	Appt. Emerg.	11.2 8.1	32 32	23 23	3.7 2.6	40 17	20 † 28	11.2 13.2	34 34	22 22 *
32. Gives information	Appt. Emerg.	30.2 10.5	27 28	24 24	16.4 11.7	30 25	23 25	14.0 6.8	35 41	22 † 20 †

\* Significant at .05-.10 level

† Significant at .02-.05 level

‡ Significant at .01 level or better

TABLE 37.1 (Continued)

CATEGORY	LEADERSHIP SITUATION	REASONING			MECHANICAL ASSEMBLY				DISCUSSION		
		No. Behaviors	Per Cent	Attributable to Leader	Av. Per Cent	In Av. Session	Attributable to Leader	Per Cent	In Av. Session	Attributable to Leader	Av. Per Cent
33. Gets insight	Appt. Emerg.	14.1	34	22 †	23	5.7	32	23			
		8.9	35	22 *	21 †	9.6	38	23			
35. Expression of opinion	Appt. Emerg.	7.9	32	23	23	6.0	31	23	37.3	23	26
		4.4	39	20 *	23	2.6	30	23	35.2	38	21 †
40. Disagrees or skeptical	Appt. Emerg.	7.1	17	28	22	4.8	35	18	10.3	18	27 †
		6.9	23	26	24	4.0	27	24	9.6	19	27
41. Argues with others	Appt. Emerg.	2.5	20	27					2.3	12	29
		2.7	65	12 †	18 †	11.3	45	18 †	3.3	39	20 *
50. Gives information on carrying out action	Appt. Emerg.	3.3	52	16 †	16 †	11.4	52	16 †	2.1	76	8 †
									3.0	62	13 †
52. Desires something to be done	Appt. Emerg.					1.2	50	17 †			
						1.0	46	18			
55. Integrates group behavior	Appt. Emerg.	1.7	45	18 *					2.0	73	9 †
		1.8	56	15 †					1.1	40	20
61. Offers to help	Appt. Emerg.					8.4	22	26			
						15.3	17	28 *			
66. Performs simple work unit	Appt. Emerg.	56.6	24	25	24	68.5	27	24	5.7	55	15 †
		69.9	24	25	24	70.0	27	24	6.3	15	28
90. Stands around doing nothing	Appt. Emerg.					13.8	11	30			
						10.3	12	29 *			
Total	Appt. Emerg.	269.0	32	23 †	23 †	294.9	29	24 *	197.0	29	24
		248.0	31	23 †	24 †	289.6	28	24 †	192.7	38	21 †

\* Significant at .05 level

† Significant at .01 level or better

icance, usually due to their relatively infrequent occurrence. Such categories are number 26, "proposes course of action for others," number 29, "initiates action toward problem-solving which is continued or followed," number 33, "gets insight," and number 55, "integrates group behavior." These categories, along with the two previously mentioned, definitely imply that leaders are characteristically concerned with (a) getting insight or analyzing the situation, and (b) with initiating the action required.

It seems that in some cases the leader's behavior is determined by the task on which the group is working, whatever the situation. Uniquely associated with the reasoning task is category 22, "asks for information on facts," which is to be expected, since in this task information from each of the subjects must be coordinated to obtain a solution to the syllogistic reasoning problems. Specifically related to the mechanical assembly task are category 52, "expresses a desire that something be done," and probably category 90, "stands around doing nothing." Again these behaviors are the kind that would be expected from the nature of the task. The mechanical assembly task involves a large number of work units. Once the general plan of construction is perceived, there are sufficient work units for all to participate. Thus, we find the leader on this task "expressing the desire that something be done" and not "standing around doing nothing," since the task demands that the leader be active in getting others to enter into the work. Associated with leader activity on the discussion task are category 24, "asks for expression of feeling or opinion," category 31, "agrees or approves," and category 32, "gives general information," and perhaps a low score on category 40, "disagrees or skeptical." Here the discussion leader seems typically to give information, and to ask for expressions of opinion, but he does not disagree; rather he approves or agrees. These are the types of behavior in discussion that the leader has freedom to engage in because of the kind of task involved.

Finally, there seem to be interesting differences in behavior depending on whether the group was working under emergent or appointed leader conditions. It appears that in the appointed situation the leader may perceive his role as that of a coordinator of activity or as an agent through which the group can accomplish its goal. In the emergent group, on the other hand, the person who becomes the leader may take over the leadership by energetic action and by trying to get the other members to accept his leadership. The leaders of the emergent group discussion tasks show much greater over-all activity than the leaders in any other situations or tasks, as may be seen from the "total" row in Table 37.1. Category 21, "calls for attention," is significant only for the reasoning task in the emergent situation. Category 27 is "supports or gives information regarding his proposal." For the discussion task in the appointed situation, a con-

siderable amount of behavior is classified as 27, but the individuals showing most of this behavior are the non-leaders. In contrast, in the emergent situation the leader has many more 27s attributable to him than do the non-leaders. Similarly for category 28, "defends self (or his proposal) from attack," for category 35, "expression of opinion," and for category 41, "argues with others." Exactly the reverse is found for category 66, "performs a simple work unit," where the appointed leader shows a great deal of such behavior and the emergent leader very little. In the discussion task, this category was used to indicate the routine recording of opinions and writing of conclusions. In the emergent situation, the leader had someone else do this routine work, whereas in the appointed situations the leader tended not to impose the writing chore on someone else.

All these results were contrary to expectations. It was assumed that the appointed situation would be structured more in an "authoritarian" direction than the emergent situation would be. The reverse seems to have occurred. The results for the appointed situation may be explained by speculating that the appointed leader conceives his role as one of coordinator rather than as a director or controller of the group's activities. This would apparently be the role expected of him by the majority of group members. Some incidental evidence bearing on this point was obtained in interviews with subjects dealing with their behavior when they were appointed leaders. In general, they felt that as leaders they should not interfere with the group's activity, that the other members of the group were as capable of doing the tasks as they were, and that their main job was merely "to keep things moving." It can probably be said, then, that the appointed leaders conceive their chief function to be that of moving their groups toward agreeing on a solution to the problem presented and initiating action toward this solution. The appointed leaders attempted to do this by eliciting the opinions of the group members, minimizing conflicts, and integrating in written form those opinions on which there was general agreement. The leaders of the emergent groups, on the other hand, had to establish their positions of leadership by being forceful and strongly supporting their own proposals in competition with other potential leaders. It may be that individuals rated as leaders in the emergent situations were competing for high status positions, whereas the individuals appointed as leaders had their status positions secured, and the nature of their positions required that they become more involved in the goals of the group as a whole.

In some respects the categories on which the leader does not differ from the other members of the group are of equal interest with those areas where there is a difference. Categories 1 through 12 included "personal feelings of," i.e., such things as confusion, aggressiveness, and friendliness. Unfortunately, not a large number of behaviors were recorded in



this area, but of those recorded, there seemed to be no outstanding differences between leaders and others. Item 30, "supports proposal of another," while used fairly frequently is shown about equally by the leader and by the other members. However, just as some leaders' differential behaviors were specific to particular tasks, so some similarities seem to be related to specific tasks. In the reasoning task, the leader did not give information (category 32) significantly more frequently than others, nor did he perform simple work units (category 66) more frequently. For the mechanical assembly task, it is particularly noticeable that of 17 comparisons made on categories 60 through 68, only one comparison was significant at even the 10% level of confidence. In other words, the leader did not differ from others in the amount of helping with work, performing simple work units, etc. There seem to be no outstanding similarities for the discussion task, which reinforces the belief that in this task being appointed or not is a very important determinant of the behavior elicited.

An incidental but very important conclusion indicated by the above findings is that the generality of the results of small group research will often be limited by the kind of task used. Much of the work in this field, such as that of Bales (1), Bass (2), and French and Bell (8), has been done on discussion groups. It seems apparent that the requirements of the task and the formal characteristics of the group structure will importantly determine the results observed.

### Summary

Using a system of categorization, individuals were observed working in small groups on reasoning, mechanical assembly, and discussion tasks. Some groups worked with an appointed leader and others in an emergent situation. The behavior of the leaders is compared with that of other group members. The unique behavior of leaders over all situations and tasks was concerned with (a) analyzing the situation and (b) initiating action required. Other leader behaviors seemed to be associated with specific tasks or situations. In the discussion task, and to some extent on other tasks, the leaders who emerged in the emergent situation were more "authoritarian" than were the leaders who were appointed. Except in the discussion task, leaders and other group members do not tend to differ greatly in the amount of work performed. It is emphasized that the behavior of group members is considerably determined by situational and task-dictated requirements.

### REFERENCES

1. Bales R. F. *Interaction process analysis*. Cambridge: Addison-Wesley Press, 1950.

2. Bass, B. M. The leaderless group discussion technique. *Personnel Psychology*, 1950, **3**, 17-32.
3. Bird, C. *Social psychology*. New York: Appleton-Century, 1950.
4. Boring, F. G. (Ed.) *Psychology for the Armed Services*. Washington: Infantry Journal, 1945.
5. Carter, L., Haythorn, W., & Howell, M. A further investigation of the criteria of leadership. *Journal of Abnormal and Social Psychology*, 1950, **45**, 350-358.
6. Carter, L., Haythorn, W., Meirowitz, B., & Lanzetta, J. A note on a new technique of interaction recording. *Journal of Abnormal and Social Psychology*, 1951, **46**, 258-260.
7. Carter, L., Haythorn, W., Meirowitz, B., & Lanzetta, J. The relation of categorizations and ratings in the observation of group behavior. *Human Relations*, 1951, **3**, 239-254.
8. French, R. L., & Bell, B. Consistency of individual leadership position in small groups of varying membership. *Journal of Abnormal and Social Psychology*, 1950, **45**, 764-767.
9. Hemphill, J. K. Relations between the size of the group and the behavior of "superior" leaders. *Journal of Social Psychology*, 1950, **32**, 11-22.
10. Lippitt, R. *Training in community relations*. New York: Harper, 1949.
11. Murphy, L. *Social behavior and child personality*. New York: Columbia Univ. Press, 1937.
12. Parten, M. Leadership among preschool children. *Journal of Abnormal and Social Psychology*, 1933, **27**, 430-440.
13. Roff, M. A study of combat leadership in the Air Force by means of a rating scale: group differences. *Journal of Psychology*, 1950, **30**, 229-239.
14. Sanford, F. H. *Authoritarianism and leadership*. Philadelphia: Institute for Research in Human Relations, 1950.

## The Contribution of a Discussion Leader to the Quality of Group Thinking: The Effective Use of Minority Opinions

Norman R. F. Maier and Allen R. Solem

In a previous study Maier (7) demonstrated that a leader can upgrade a group's thinking and cause the members to discover a creative solution to a problem by asking good questions and influencing the direction of their thinking. However, in order to do this, it was necessary for the leader to be skilled and also to have a knowledge of the creative solution so as to be able to ask good questions. This study demonstrated that a leader with a good idea could not get it generally accepted if he tried to sell it to others, but he could get the idea accepted if he conducted a permissive and stimulating discussion. This does not mean that he could get any of his ideas accepted by this method. Rather, the idea had to have merit and not be opposed to the group's interests.

In this paper we wish to carry the study of discussion leadership a bit farther and determine whether the leader can serve in any other capacities to upgrade a group's thinking. We shall concern ourselves with the effectiveness of a leader whose ability does not exceed that of his group members, and explore the leader's functions apart from his intellectual contributions.

In autocratic leadership much depends on the leader's intellectual ability because the final decision is his. Thus he is in a good position to influence the quality of decisions. The great limitation to autocratic leadership is that such a leader has difficulty in having his decisions accepted so that appropriate action will follow. In order to offset this deficiency, he often resorts to power so that the desired action will be obtained. Even in such instances his power may be insufficient to accomplish the most efficient results, or the group may organize resistance and set up an opposing power.

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The great asset of democratic leadership, in which the group decision method is used (1, 3, 4, 5, 6), is that it accomplishes group acceptance of a solution. According to this method, the leader conducts the discussion but does not impose his views on the group, invoke his authority, or take sides on any issue. Rather, he plays a permissive role, encourages discussion and attempts to get a unanimous decision on action to be taken. A realistic fear is that unless such a leader is highly skilled, action will be delayed, or the decision may be of poor quality. Is it reasonable to suppose that a leader who exerts no authority has little or no influence on the outcome of a discussion? There may be important functions he can perform other than those of expressing his views, and it is possible that these may have an important influence on the outcome without in any way stimulating group resistance. Some of these have previously been suggested (5, 7). One that readily comes to mind is that he states the issue to be considered by the group. This perhaps is an important function and the manner in which the problem is stated can determine whether group members will react by defending themselves, or by approaching the problem constructively. This function again requires special ability and training. Are there benefits that can be obtained from the leader which are even more basic to the group decision procedure itself and less dependent upon the skill of the leader?

If a group is previously presented with a problem, the leader can determine neither the subject of the discussion nor the manner in which the problem is stated. When this procedure is used, one short-circuits two important functions of a democratic leader. Under such circumstances need there be a leader, or would a group of persons discussing a problem without a designated leader do just as well?

As soon as the question of the goodness of outcome is raised, the problem of determining what constitutes a good decision presents itself. If several solutions are possible, what makes some of them better than others? One approach is to evaluate the satisfaction of the participants; another is to measure the objective quality of the solution. In this investigation the concern is with the intrinsic quality of the decision irrespective of personal opinions.

In order that the quality of a decision can be objectively determined it is desirable to use a problem for which there can be no dispute as to good and poor answers. Mathematical problems best serve this purpose, provided they are of such a level of difficulty that each person feels he is qualified to participate in solving them.

It is here postulated that the presence of a permissive discussion leader will up-grade a discussion because he can give minority individuals a greater opportunity to present their views. In such instances, social pressure plays a less important part in determining opinions. To the extent



that minority opinions are superior to those of a majority, they should be allowed to exercise an influence. If a minority opinion has reality on its side, it should be capable of influencing the quality of a group's thinking. However, if a minority opinion cannot be adequately expressed, this opportunity to up-grade a group's thinking will be lost. The function of a discussion leader is to permit the expression of various viewpoints. Thus he budgets speaking time and permits the minority opinion to be heard. Since, in some instances, the minority thinks more logically than the majority, it follows that the general effect of a group's thinking should be up-graded when conditions permit minorities to be heard.

### Experimental Procedure

In order to determine whether a leader can perform a useful function in a group discussion by merely conducting the discussion, it was necessary to prevent any other contributions he might make. At the same time it was necessary to have a control group in which a similar discussion took place but without the aid of a designated discussion leader. Thus two types of discussion groups were used, one in which a leader led the discussion and the other in which an observer attended the discussion.

The discussion groups were made up of undergraduate college students (primarily Juniors and Seniors) enrolled in a course on the Psychology of Management. All previously had instruction in group discussion methods and some role-playing experience. They were accustomed to forming small discussion groups, but they should not be regarded as skilled participants or discussion leaders.

The experiment was repeated for three semesters in order to obtain a sufficient number of subjects. A total of 353 men and women students participated. In each instance, the entire class was divided into small discussion groups of five or six persons. (The variation in the size of the groups was permitted in order to accommodate all students present.) A total of 67 groups was obtained, 34 of which had discussion leaders and 33 of which had an observer.

After each class had been divided into discussion groups, the experimental procedure was as follows:

1. Each group was asked to select a representative.
2. While groups selected their representatives, assistants passed out sets of cards to each group, one card for each individual. Each card had two spaces, one labeled "before," the other "after."
3. When steps 1 and 2 were completed, the experimenter announced that a problem would be presented and that all persons were to write their individual answers to the problem on their cards under the heading "before." After the initial answer had been recorded, all groups were

to discuss the problem. Following the discussion, they were again to write their individual answers to the problem on the cards under the heading "after."

4a. About half of the groups were informed that their representatives would function as observers. The duties of the observers were to listen to the discussion, refrain from expressing any views of their own, to indicate their "before" and "after" answers on the cards, as did the discussants, and to mark on their cards that they functioned as observers.

4b. The rest of the groups were informed that their representatives would function as discussion leaders. The discussion leaders were instructed to conduct a group discussion of the problem. Their general duties were to encourage the participation of all members and to ask questions so as to cause the group to think together rather than as individuals. Specifically they were requested strictly to avoid expressing their own views on the problem. Instead they were asked to be permissive and to accept the various points of view expressed. Finally, they were asked to try to get group agreement on an answer. The leaders also were requested to indicate on their cards that they functioned as leaders and to include their own "before" and "after" answers.

5. Following the special instructions to the observers and the leaders, the problem itself was presented to the groups. The problem was stated as follows: "A man bought a horse for \$60 and sold it for \$70. Then he bought it back for \$80 and again sold it for \$90. How much money did he make in the horse business?" The correct answer to the problem is \$20. However, there are several incorrect answers which are plausible. Answers generally range from minus \$10 to plus \$30, with a gain of \$10 being the incorrect answer most frequently given.

6. Following the statement of the problem, a minute was allowed for all persons to record their "before" answers.

7. All groups were asked to begin their discussions. Eight minutes for discussion were permitted.

8. After a warning signal, all persons were asked to record their "after" answer on the cards.

9. The cards for each group were collected from the leaders and observers by assistants and placed in separate envelopes.

## Results

A summary of the results is presented in Table 38.1. This table shows that prior to the discussions the correct answer to the problem was given by 15.8% of the 177 persons in the leader groups and by 11.3% of the 176 persons in the observer groups. Preceding the discussions, therefore, the two types of discussion groups were very similar in the proportion of per-

sons who held the correct answer to the experimental problem. Following the group discussions, however, the number of persons in the leader groups who gave the correct answer increased to 83.6% (an improvement of 82.5%) while in the observer groups it increased to 71.6% (an improvement of 61.6%). Thus in both types of situations there was an increase in the quality of thinking, as measured by the number of persons giving the correct answer, but the leader groups showed the greater improvement. A chi-square test reveals that the difference is significant at less than the 1% level.

TABLE 38.1

INFLUENCE OF DISCUSSION LEADERS *vs.* OBSERVERS ON THE QUALITY OF GROUP PROBLEM SOLVING  
(*N* = 353 College Students)

	BEFORE DISCUSSION		AFTER DISCUSSION	
	Percentage with Correct Answer	Percentage with Incorrect Answer	Percentage with Correct Answer	Percentage with Incorrect Answer
Leader groups	45.8	54.2	83.6	16.4
Observer groups	44.3	55.7	71.6	28.4
Value of chi-square computed from <i>N</i>	.0744 (not significant)		7.3459 (significant between .01 and .001 with 1 d. f.)	

Following the demonstration of a significant difference in over-all effects in favor of discussions conducted by a leader, the next step is to view the data in the light of the original postulate. According to this postulate, a permissive leader will up-grade a discussion because he can give persons with minority opinions a greater opportunity to present their views than would otherwise occur.

To test the influence of minorities the 34 leader groups and the 33 observer groups have been subdivided according to the number of persons in a group who reached the correct answer before discussion.

In Table 38.2, these subgroups are indicated by the ratio of correct to incorrect answers submitted by group members before discussion. The frequency with which each subgroup occurred is shown in column 2 for the leader groups and in column 6 for the observer groups.

Inspection of Table 38.2 indicates that the effect of leaders and observers varies with the ratio of correct to incorrect answers in their groups before discussion. If the extreme majority subgroups (5:0, 4:1, and 1:2) are combined so as to give more cases and the extreme minority groups (0:5, 1:5, and 1:4) are combined for the same reason, four fairly good

TABLE 38.2

EFFECT OF LEADERS ON GROUPS DIFFERING IN RATIO OF CORRECT TO INCORRECT ANSWERS  
( $N = 353$  College Students)

TYPE OF GROUP. BASED ON "BE- FORE" ANSWER RATIO (CORRECT TO INCORRECT ANSWERS)	LEADER GROUPS				OBSERVER GROUPS			
	No. of Each Type of Group	Total No. of Persons with Incorrect Answer before Discussion	No. of Persons Changing to Correct Answer after Discussion	Percentage Changing after Discussion	No. of Each Type of Group	Total No. of Persons with Incorrect Answer before Discussion	No. of Persons Changing to Correct Answer after Discussion	Percentage Changing after Discussion
Majority groups	5:0	1	0	0.0	2	1	1	100.0
	4:1	5	6	33.3	4	7	7	100.0
	4:2	11	25	72.0	10	24	10	41.7
	3:2							
	3:3							
Minority groups	2:3	8	26	80.8	7	23	18	78.3
	2:4	7	29	75.9	8	33	12	36.4
	1:4	2	10	40.0	2	10	0	0.0
	1:5							
	0:5							
Totals	54	96	67		33	98	48	



sized subgroups are formed. Using the frequency distribution of the number changing in leader and observer groups, a chi-square significant at the 4% level is obtained. Since this difference approaches significance, it appears that the presence of a discussion leader has different effects, depending on the number of persons holding correct answers before discussion. When a strong majority is correct at the outset, the presence of the discussion leader seems to reduce the tendency of minorities to adopt the correct answer. However, in all other instances the presence of the leader favors the trend toward adopting the correct answer. Thus with a small majority or a tie in the group, the leader groups are favored over the observer groups. A strong minority with the correct answer is influential in all instances (80.8% changing in leader groups and 78.3% changing in observer groups). When the minority is small (one person), the leader groups are definitely up-graded more than the observer groups (75.9% compared to 36.4%).

The fact that correct answers emerged when no one was correct is of special interest (see last subgroup in Table 38.2). Inspection of the raw data reveals that the four persons who changed under these conditions were confined to one group. All indicated \$10 as their initial answers, and all but the leader changed to \$20 after discussion. It is possible that the leader influenced the group thinking by opening up the question; certainly he did not give them intellectual leadership.

Since the total effect favors the leader groups (Table 38.1), it is of interest to determine the relative merits of the leader's function in majority and minority situations. In Table 38.3, the groups are divided into two categories, those in which the minority initially held the correct answer, and those in which the majority initially held the correct answer. (The few instances of tie votes are included with the majority.) This table reveals that most of the difference obtained from the leader and observer group discussions occurred when the minority was correct. Thus, the minority situations contributed a difference of 26.8% between leader and observer groups, whereas the majority situations contributed a difference of 8.2%. The general trend thus reveals that a discussion leader up-grades thinking when the minority is correct at the outset, but contributes little when the majority is correct.

It remains to determine whether the contribution of the leader to the up grading of discussions was due to his function as a discussion leader, or whether he may have made an intellectual contribution. To test this, we have compared the pre- and post-discussion answers of leaders and observers. Data for the comparisons are shown in Table 38.4.

It is clear from the data in column 3 that the leaders had no initial advantage over the observers. In both the majority and minority situations, more observers than leaders gave the correct answer prior to the

TABLE 38.3  
EFFECT OF LEADERS ON MINORITY AND MAJORITY OPINIONS  
( $N = 353$  College Students)

	MINORITY (WITH CORRECT ANSWER)			MAJORITY (WITH CORRECT ANSWER)		
	No. of Persons with Incorrect Answer before Discussion	No. of Persons Changing as Result of Discussion	Percentage Change	No. of Persons with Incorrect Answer before Discussion	No. of Persons Changing as Result of Discussion	Percentage Change
Leader groups	65	47	72.3	31	20	64.5
Observer groups	66	30	45.5	32	18	56.3
Difference in per- centage change			26.8			8.2

TABLE 38.4  
COMPARISON OF LEADER'S AND OBSERVER'S RESPONSES TO EXPERIMENTAL PROBLEM  
( $N = 34$  Leaders and 33 Observers)

	No. of Persons	Percentage Correct before Discussion	Percentage Correct after Discussion	No. of Per- sons with In- correct An- swer before Discussion	No. of Per- sons Chang- ing to Cor- rect Answer after Discussion	Percentage Changing
Leaders of majority groups	17	58.8	88.2	7	5	71.4
Observers of majority groups	16	75.0	87.5	4	2	50.0
Leaders of minority groups	17	29.4	88.2	12	10	83.3
Observers of minority groups	17	41.2	52.9	10	2	20.0

discussions. Neither did the leaders have an advantage over their group members. When the initial scores for leaders in majority and minority situations are combined, we find that 44.1% of the leaders answered correctly before the discussions, as compared to the figure of 45.8% obtained from their groups as a whole (Table 38.1). In the case of the observers, 57.6% answered correctly prior to discussion, compared to the 44.5% obtained from their groups. Since the leaders themselves did less well than all other groups, their contribution to upgrading discussions could not have been one of intellectual leadership.

A comparison of responses of leaders and observers in column 4 (Table 38.1) indicates a tendency for a greater proportion of leaders than observers to give the correct answer after the discussions. This is particularly true when we compare leaders and observers of minority groups. That the discussions influenced the leaders more than the observers is even more apparent from the figures in the last column of Table 38.1. Between the leaders and the observers of majority groups, there is a 21.4% difference in the number changing to the correct answer after discussion. In the minority situation the difference is 63.3% in favor of the leaders. Thus, the discussions had a greater effect on leaders than on observers in both the majority and minority situations, but the minority condition contributed about three times as much to the difference between leaders and observers as did the majority.

This ratio of 3 to 1 is approximately the same as that reported in Table 38.3 for group members and shows that changes of opinions of leaders and observers follow the same pattern as that of the members of their groups.

### Discussion

• The results clearly demonstrate that a free discussion tends to increase the number of correct answers to a problem for which a variety of incorrect answers seems plausible. This indicates that opinions which check with reality have more influence than those which are not so well founded. It also was demonstrated that the presence of a discussion leader, even when his own opinions are not a factor in the discussion, up-grades the outcome of a discussion more than the presence of an observer. Thus, a discussion led by a designated leader is better than a discussion left to chance leadership. These "led" discussions also had a beneficial effect on the leader's thinking, whereas the "unled" discussions were of lesser benefit to observers.

The reason a clearly led discussion is superior to one not so guided was shown to be due primarily to the fact that the leader permitted minority opinions to exert a constructive influence. Ordinarily, persons

who change opinions are influenced by the social pressure (2, 8) that is exerted by the majority view. It follows that when a majority opinion is wrong, social pressure has an undesirable effect on the outcome of the discussion. With the presence of a discussion leader this social pressure is reduced, allowing minority opinions to exert an influence. In protecting a minority opinion from the social pressure of the majority, the leader allows the minority to have enough influence to make a possible contribution to the quality of a group's thinking.

If the presence of a leader serves to protect the minority from social pressure, might not this serve also to down-grade a group's thinking? Apparently this did not occur in the experiment to any marked degree. The reason seems to be that a minority can effectively compete with the social pressure of the majority only when the minority has reality on its side. Thus it was only when the minority held the correct answer that members of the majority changed their views.

It follows then that a minority opinion in a group discussion is not a danger; it can serve only to improve the quality of group thinking.

Since this contribution of the minority opinion is dependent upon the function of a leader, this aspect of the leader becomes an important leadership function, and it constitutes a positive contribution that a leader can make to improve the quality of a group's thinking. This function of giving the minority an opportunity to be heard in no way interferes with a group's acceptance of a solution, and therefore, it is consistent with the democratic type of leadership, this function being a positive and active one, yet consistent with the functions of permissiveness and acceptance. Further, this function requires no great skill, it having been effectively exercised by college students with a minimum of training. It was also shown experimentally that these leaders had no more knowledge and understanding of the problem than did the members they led in the discussions.

Other constructive influences that the leader may have exerted in the present experiment, but which do not stand out as clearly, are (a) his possible contribution to resolving conflicts in terms of quality when a deadlock occurred (groups evenly divided on right and wrong answers), and (b) his ability to create a discussion when all members initially held the incorrect answer.

This experiment shows that there are constructive and active functions that a democratic discussion leader can perform and that constitute contributions to the quality of a group's thinking. Those which now seem to have considerable substantiation include:

1. his ability to determine the subject for discussion,
2. his ability to cause the group to react constructively by stating the problem in constructive terms,



3. his ability to ask stimulating and exploratory questions, provided he is sufficiently skilled, and
4. his ability to use minority opinions so as to up-grade the quality of a group's thinking.

It is conceivable that by having additional skills in protecting minorities he can cause hostile minorities to feel more accepted by the group and thus cause them to become true group members with a sense of group responsibility. If this is accomplished, he functions as a nondirective group therapist (9).

The above list of functions which a democratic leader may execute is not meant to be complete. It remains for further research to isolate others. The one isolated in the present experiment seems to be a highly important one, particularly because it is so relevant to present-day social problems, in which the dangers rather than the assets of the minority seem to be stressed.

Three different forces seemed to be operating in the discussions which led to changes in opinion in the present experiment. These are (a) the discussion leader's contribution in letting the minority be heard, (b) the social pressure of the majority, and (c) external reality, or the facts which discussants supplied to support their opinions.

It is the relative importance of these forces that causes the dynamics of groups differing in constituency to vary in their outcomes.

### Summary

The quality of group thinking of 31 groups (five or six persons including the leader) supplied with a discussion leader was compared with that of 33 groups supplied with an observer, in order to test the contribution of a leader in his function of merely conducting a permissive discussion. Both sets of groups were presented with the same problem by the experimenter, and both leaders and observers were asked to refrain from expressing their own views. The difference between the "leader" and "observer" groups was that the leaders were asked to conduct a discussion, whereas the observers were asked to listen to the others while they discussed.

The problem used was as follows: A man bought a horse for \$60 and sold it for \$70. Then he bought it back for \$80 and again sold it for \$90. How much money did he make in the horse business? The correct answer to this problem is \$20, and the most frequent incorrect answer is \$10.

All persons were asked to write their answers on a card both before and after an eight-minute discussion.

The results showed that the two sets of groups gave similar answers before the discussion, approximately 45% of 353 college students sub-

mitting the correct answers. After the discussion the correct responses of the leader groups rose to 83.6%, whereas those of the observer groups rose to 71.6%. This difference was significant at less than the 1% level.

Further analysis revealed that the major part of the difference obtained was due to the relatively greater influence that individuals with minority opinions exerted in the leader groups than in the observer groups. Thus, when one person had the correct answer, he was more able to convince others when there was a discussion leader than when there was an observer.

The results are interpreted to mean that a discussion leader can function to up-grade a group's thinking by permitting an individual with a minority opinion time for discussion. In a leaderless discussion the majority dominates, and this condition releases social pressure which has an important influence on opinion. Without the right kind of leadership, therefore, a minority cannot effectively compete with the pressure of the majority. When the minority opinion is right, and there is no protection from the leader, a distinct potential contribution is lost; when it is wrong, the minority cannot convince the majority. The leader, in giving the minority a greater voice, can up-grade the end result of a discussion without running the risk of down-grading the end product. The quality of thinking in a democracy is thus dependent on the opportunities it affords minority opinions to be heard.

#### REFERENCES

1. Lewin, K. Group decision and social change. In T. M. Newcomb & E. L. Hartley (Eds.), *Readings in social psychology*. New York: Henry Holt, 1947.
2. Lewin, K. *Resolving social conflicts*. New York: Harper, 1948.
3. Lewin, K., Lippitt, R., & White, R. K. Patterns of aggressive behavior in experimentally created social climates. *Journal of Social Psychology*, 1939, 10, 271-299.
4. Maier, N. R. F. A human relations program for supervision. *Industrial and Labor Relations Review*, 1918, 1, 443-464.
5. Maier, N. R. F. Improving supervision through training. In Arthur Kornhauser (Ed.), *Psychology of labor management relations*. Champaign, Ill.: Industrial Relations Research Association, 1949.
6. Maier, N. R. F. *Principles of human relations: applications to management*. New York: Wiley, 1952.
7. Maier, N. R. F. The quality of group decisions as influenced by the discussion leader. *Human Relations*, 1950, 3, 155-174.
8. Newcomb, T. M. *Personality and social change*. New York: Dryden Press, 1943.
9. Rogers, C. R. *Counseling and psychotherapy*. Boston: Houghton Mifflin, 1942.

## Effects of Participatory vs. Supervisory Leadership on Group Judgment

Malcolm G. Preston and Roy K. Heintz

Since the initial impetus given to the study of the theory of leadership by Kurt Lewin and his students, a number of investigators have reported on various aspects of the effects of leadership upon the behavior of the followers. Among the questions studied have been the effects of the type of leadership upon the morale of the followers (1, 3), upon the efficiency of the followers (4), and upon the personality development of the followers (2). The present experiment is in the tradition of experiments of this kind, being concerned with the extent to which the character of the leadership is a condition affecting the degree to which the individual will shift his preferences in the direction of the preferences of the group of which he is a member. An additional motive for the publication of this research, beyond the motive of communicating information about leadership, lies in the fact that the experiment is sufficiently simple to be carried out in student laboratories, and, with reasonable care on the part of the instructor, produces outcomes consistent with those reported here. This statement is based upon the fact that the experiment has been done about a dozen times in elementary courses at the University of Pennsylvania during the last two years, and has generally produced results consistent with those disclosed here.

### Procedure

A list of the names of 12 prominent men was presented to a class of 83 students with instructions for each of the students to place them in an order of merit, assigning first place to that man who was most desired as President of the United States for the next term, and last place to that man who was least desired for that office for the next term. The members of the class were instructed to order the names without influencing or

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consulting others. This operation was proctored in order to discourage collaboration. The 12 names were: Barkley (Ky.), Bricker (Ohio), Douglas (Ore.), Martin (Mass.), McNutt (Ind.), Morse (Ore.), Pepper (Fla.), Saltonstall (Mass.), Stettinius (Va.), Vandenberg (Mich.), Wallace (Iowa), and Warren (Calif.). A brief, neutral statement was made about each name in order to refresh the memories of the members of the class as to salient events in their public histories. As soon as the 12 names were ranked, the protocols were collected, and the attention of the class was directed to other irrelevant materials.

Twenty-four hours later, the class was divided into 18 groups. Each of the groups comprised either four or five students, all of the same sex. After the groups were formed, each was instructed to elect a person to be leader. The 18 leaders were then taken into another room, and were randomly divided into two groups of nine. The first set of nine leaders, known later as the participatory leaders, was instructed to have their followers agree upon an order of the 12 prominent men as candidates for the presidency, paying particular attention to four matters: (a) They were to be sure that each of the names received a reasonable amount of consideration. In particular, they were instructed to be careful that decisions in any case were not overly influenced by an extreme prejudice which might be present in one or more members of the group. (b) They were to endeavor to have all people among their followers represented in the discussions, paying particular attention to followers who might be shy or backward in offering or defending their opinions. (c) They were to discourage any tendency in the direction of deciding doubtful cases by the use of chance, e.g., by tossing coins. (d) The operation was to be complete in half an hour.

The second group of nine leaders, known later as the supervisory leaders, was instructed to have their followers produce group orders of the politicians within the ensuing half hour. They were instructed not to participate in any of the discussion, and to limit their responsibility solely to seeing that the work was done with reasonable expedition. They were to be present during the followers' discussions, and had authority to bring the group back to its task if it tended to wander afield. Each of the two sets of nine leaders was composed of seven women and two men.

The leaders returned to their respective groups. Each group then produced a collective ranking of the 12 names. At the end of the work the collective rankings were taken up by the experimenter. The class then turned to other matters.

Twenty-four hours later, the individuals comprising the class were instructed to consider the 12 names for the third time. As a result of this consideration, a final ranking was prepared by each of the 83 subjects.



On each of the three occasions, the class was instructed to keep no record of the work done. It is believed that they cooperated in this respect. At the conclusion of the first two sessions, subjects were requested to turn in their lists of candidates with rank orders indicated. Sheets were signed for purposes of identification. At the conclusion of the third trial these initial and group lists were returned to subjects. Each subject was then asked to transcribe his initial order, his group order, and his final order to a standard mimeographed protocol sheet. This sheet contained a series of questions designed to secure introspective data and elicit comment relative to the study.

The data of the experiment consist in three orders of names from the members of each of four groups, (a) participatory followers, (b) participatory leaders, (c) supervisory followers, and (d) supervisory leaders, together with the reports on the questions referred to above. The rankings were treated by calculation of three coefficients of rank-difference correlation for each subject. The rank-difference coefficients were (a) the correlation between the first of the rankings by individuals and the ranking of the group of which he was a member, hereafter denoted as  $Rho_{12}$ ; (b) the correlation between the first and the final individual rankings, hereafter denoted as  $Rho_{13}$ ; (c) the correlation between the group ranking (of the group of which he was a member) and the final individual rankings, hereafter denoted as  $Rho_{23}$ .

The coefficients of correlation were submitted to an averaging process, in order to produce a measure of central tendency for each of the three types of coefficient and for each of the four groups. The ensuing discussion will be based upon a consideration of these 12 mean coefficients and of certain of the differences between them. To secure an average coefficient, all coefficients were transformed by use of Fisher's  $z$  function and average  $z$  obtained thereby. The average  $z$  was then transformed into its corresponding  $r$ . The significance of the difference between average  $r$ s was evaluated by considering the variability of the corresponding distributions of  $z$ . While it is true that  $z$  has been calculated as a function of  $r$  (not  $Rho$ ), the differences between  $r$  and  $Rho$  are so slight that the error introduced by considering them to be equivalent is negligible.

## Results

Table 39.1 shows the mean intercorrelations between the three sets of judgments for each of the four experimental subgroups. Table 39.2 presents the comparisons which may be made between the subgroups, indicating the differences and the statistical reliabilities of the differences. Table 39.3 discloses the differences between two of the correlations,

namely  $Rho_{12}$  and  $Rho_{23}$ , and furnishes the data concerning the reliability of these differences.

### *Effect of Individual upon Group ( $Rho_{12}$ )*

*Effects due to type of leadership.* The mean correlations between initial and group rankings are listed in column 1 of Table 39.1. The reader will observe that the initial rankings reported by the supervisory

TABLE 39.1

MEAN RANK-DIFFERENCE CORRELATIONS \* BETWEEN ORIGINAL, GROUP, AND FINAL RANKINGS AS A FUNCTION OF LEADERSHIP TECHNIQUE AND THE ROLE OF THE INDIVIDUAL

Group	N	$Rho_{12}$	$Rho_{23}$	$Rho_{13}$
Supervisory leaders	9	.22	.31	.87
Participatory leaders	9	.25	.72	.64
Supervisory followers	33	.52	.75	.78
Participatory followers	32	.42	.86	.64

\* Values reported are the equivalents of (mean)  $z$  functions transformed from the original data.

leaders bore only a slight resemblance to the rankings of the groups of which they were members. The original rankings of the participatory leaders bore only slightly more resemblance, if any more, to their group rankings.

The initial rankings made by supervisory followers proved to be moderately similar to their group rankings and the initial rankings returned by the participatory followers were somewhat less like their group rankings. This latter difference approaches, but does not reach, significance.

*Effects due to role of individual in group.* The correlations between group rankings and initial rankings are higher for followers than for leaders under both supervisory and participatory conditions, as can be seen in column 1 of Table 39.2. Under the supervisory condition this leader-follower difference is significant at the 2% level.

### *Effect of Group on Individual ( $Rho_{13}$ )*

*Effects due to type of leadership.* The second columns of Tables 39.1 and 39.2 enable one to compare the relative effects of the group experience upon the final rankings made by individuals. The final rankings of participatory leaders correlate substantially with their group rankings. Final rankings of supervisory leaders, on the other hand, correlate low with their group rankings. The difference (see Table 39.2) is significant at the 5% level.

Similarly, the final rankings of participatory followers correlate higher with their group rankings than do the final rankings of supervisory followers with supervisory group rankings. This difference (see Table 39.2) is also significant at the 5% level.

TABLE 39.2

COMPARISONS OF SUBGROUPS ON EACH OF THREE CORRELATIONS

Groups Compared		$Rho_{12}$	$Rho_{23}$	$Rho_{13}$
Supervisory leaders minus Participatory leaders	$d^*$	-.03	-.53	.52
	$t$	.195	2.158	2.189
	$p$	<.90	<.05	<.05
Supervisory followers minus Participatory followers	$d$	.14	-.32	.27
	$t$	1.416	2.349	2.183
	$p$	<.20	<.05	<.05
Supervisory leaders minus Supervisory followers	$d$	-.34	-.57	.30
	$t$	2.564	3.420	1.690
	$p$	<.02	<.01	<.10
Participatory leaders minus Participatory followers	$d$	-.19	-.37	.00
	$t$	1.293	1.585	.005
	$p$	<.30	<.20	>.99

\* Differences are the equivalents of differences in  $z$  functions. Note that such differences are not necessarily equal to arithmetical differences between the reported correlations.

*Effects due to role of individual in group.* The values obtained in this connection reveal that the final rankings of followers were influenced by the group process to a greater extent than were the final rankings of leaders. This is true both under the supervisory condition and under the participatory condition. The difference in the case of supervisory leaders and supervisory followers is significant at the 1% level.

#### *Extent to Which Rankings Are Unaltered by the Intervening Group Experience ( $Rho_{13}$ )*

*Effects due to type of leadership.* The third columns of Tables 39.1 and 39.2 disclose the extent to which the final rankings retain the character of the original rankings, despite the group experience and other intervening factors. The entries show that subjects who were under supervisory conditions were less influenced than subjects who were under participatory conditions. Participatory leaders and participatory follow-

ers both altered their selections to a greater extent than did supervisory leaders and followers. Differences between leaders and differences between followers are both significant at the 5% level.

*Effects due to role of individual in group.* The obtained coefficients reveal that supervisory leaders adhered to their original orderings more closely than did supervisory followers. This difference approaches, but does not reach, significance. No distinction appears in the results for participatory leaders and participatory followers in this respect.

### **Relative Effect of the Initial Ranking and the Group Experience upon Final Rankings ( $Rho_{12}$ - $Rho_{21}$ )**

Table 39.3 states the difference<sup>1</sup> between two of the aforementioned coefficients, viz., the correlation between initial and final rankings, and the correlation between group and final rankings. A positive sign signifies that the correlation between initial and final rankings is larger than the correlation between group and final rankings.

TABLE 39.3

MEAN CORRELATION BETWEEN GROUP AND FINAL RANKINGS COMPARED WITH MEAN CORRELATION BETWEEN INITIAL AND FINAL RANKINGS FOR EACH SUBGROUP

Group	$Rho_{12}$ - $Rho_{21}$ *	$t$	$df$	$p$
Supervisory leaders	.77	4.272	16	<.001
Participatory leaders	-.15	.518	16	>.50
Supervisory followers	.07	.552	64	>.50
Participatory followers	-.49	4.092	62	<.001

\* Differences are the equivalents of differences in  $z$  functions.

*Effects due to type of leadership.* The correlation between initial and final rankings is greater than the correlation between group and final rankings for supervisory subjects, both leaders and followers. For participatory subjects, both leaders and followers, the reverse is true. For supervisory leaders and for participatory followers these differences exceed the 1% level of significance.

*Effects due to role of individual in group.* The final rankings of leaders tended to be more influenced, relatively speaking, by their initial rankings; and the final rankings of the followers more influenced by the group rankings. For supervisory leaders, the difference is positive and high; for supervisory followers, positive and low. For participatory

<sup>1</sup> The reader may suppose that the treatment would have been improved if the discussion were based upon partial coefficients. The authors are agreed that it would have been preferable to use coefficients of partial correlation, had it been possible to compute them without reservation on the outcome. Since each coefficient was based upon 12 items, it was manifestly impossible to use them in this way.



leaders, the difference is negative and small; for participatory followers, it is negative and relatively large.

### Discussion of Results

Some readers may be disturbed upon finding that the group rankings correlate higher with the initial choices of the *followers* than with the original selections of the leaders. Such a reaction is understandable in view of the fact that leaders are often conceived of as persons who determine or dominate group policies, a fact which is evident from the emphasis which exists in much of the literature on leadership. But the fact that domination of policy is not the only function of the leader is equally evident in the literature, particularly in these later years, which have seen the publication of a variety of studies on other functions of leadership. For a survey of this literature the reader is referred to Stogdill (5).

The most prominent of these studies are undoubtedly those done by Lippitt (3), Lewin, Lippitt, and White (2), Bavelas (1), and others working under the influence of Lewin. Readers familiar with this work will recall that the authors distinguish between authoritarian, laissez-faire and democratic techniques, and that authoritarian techniques require the leader to assume a directive, determining role in the formation of group policy, while democratic techniques, on the other hand, require the leader to set an atmosphere which will encourage the followers to participate significantly in the formation of group policy. In such a case it does not follow that the leader will or will not endorse or accept the policy; indeed, it is evident from this experiment that he may well not. Lastly, laissez-faire programs require leaders to avoid the assumption of responsibility for the group program.

The present design has used types of leadership which have much in common with the latter two of Lippitt's types. Decisions and choices were the especial prerogatives of members rather than leaders. Participatory leaders were asked to conduct free and full discussions without imposing their own views, while supervisory leaders were asked to limit their responsibilities to getting things under way and seeing the job through on time. Under such regimens it is not surprising to find that the group formulations are more closely related to initial choices of the followers than to the initial rankings reported by the leaders.

The relations between group and final rankings are likewise in keeping with expectations. The correlation for participatory leaders exceeds that for supervisory leaders; and the correlation for participatory followers exceeds that for supervisory followers, i.e., the group judgment has more influence on the individual judgment under participatory leadership, no matter whether one considers leaders or followers. Here again it is found

that the influence is greater for followers than for leaders, an outcome which is consistent with our foregoing analysis concerning the followers' more immediate and direct determination of the group product. The differences found here as a function of experimental treatment furnish direct evidence that group deliberation under participatory leadership is more likely to change opinion, or, conversely, that opinion is less likely to change under supervisory leadership.

If the acceptance of group standards is associated with high morale,  $Rho_{\alpha}$  might serve as an index of this quality. On this basis it might well be concluded that the morale of subjects in the participatory groups was clearly superior to that of subjects in supervisory groups. This conclusion is consistent with the reports of subjects reported below.

Correlations between initial and final rankings provide evidence that group activity under participatory leadership is more productive of change of opinion. Participatory subjects departed from their initial rankings to a greater extent than did supervisory subjects as a result of group deliberation. Conversely, subjects withstood the opinions of the group to a greater degree when interacting under supervisory leadership. While no differences appear between participatory leaders and participatory followers, it may be noted that a difference appears again between supervisory leaders and supervisory followers. The final rankings of supervisory leaders correlate high with their own initial rankings. This is probably a consequence of the supervisory leader's lack of identification with his group's work, as discussed above.

Subtracting the correlation between group and final rankings from the correlation between initial and final rankings suggested itself as a simple and straightforward procedure for observing the relative influences of initial and group rankings upon the final ranking. While this procedure is not so refined as the use of partial correlation techniques, some defense for the usage may be made on the strength of its directness. This analysis shows that the final rankings of participatory subjects were more influenced by the group deliberations, while the final rankings of supervisory subjects were more closely dependent upon their own initial rankings.

### Further Discussion: Subsequent Reports of Subjects

Subjects were asked to respond to a number of items relating to their experiences in the experiment. Tables 39.4 through 39.8 summarize the data obtained by this means.

Table 39.4 shows that participatory subjects were generally better satisfied with the group ranking than were the supervisory subjects. The difference between participatory leaders and supervisory leaders is most

TABLE 39.4

PERCENTAGE OF SUBJECTS REPORTING VARIOUS DEGREES OF SATISFACTION WITH GROUP RANKING

Group	N	Satisfied	Neutral	Not Satisfied
Supervisory leaders	9	11.1	55.6	33.3
Participatory leaders	9	66.7	00.0	33.3
Supervisory followers	33	42.4	39.4	15.1
Participatory followers	32	59.3	18.8	21.9

notable. These outcomes, while not statistically significant, are internally consistent, and also consonant with the findings discussed above.

Table 39.5, part (a), bears upon the question of the relative influence of leaders and followers, considered above. It shows that supervisory leaders were never identified as "having the greatest influence" upon the group ranking. A considerable number of the participatory followers, on the other hand, felt that their leader had the greatest effect. Two of the nine participatory leaders actually claimed that they had the greatest voice in their group rankings. (Followers sometimes claimed they played determining roles—two supervisory followers and three participatory followers identified themselves as having the greatest influence.)

Part (b) shows that supervisory leaders were never identified as "having the greatest knowledge concerning the candidates." In contrast, a fairly large number of the participatory followers identified their leaders as having superior knowledge. Again, only two participatory leaders asserted

TABLE 39.5

REPORTS UPON INFLUENCE, KNOWLEDGE, AND DISSATISFACTION \*

SUBGROUP	N	(a) GREATEST INFLUENCE			(b) GREATEST KNOWLEDGE			(c) LEAST SATISFIED		
		L	F	NR	L	F	NR	L	F	NR
Supervisory leaders	9	—	7	2	—	7	2	4	5	—
Participatory leaders	9	2	6	1	2	7	—	2	3	4
Supervisory followers †	33	—	24	10	—	30	6	3	22	8
Participatory followers †	32	10	19	5	12	19	4	6	16	11

\* Values in the table are frequencies with which leaders or followers were designated (by each subgroup) as (a) exerting the greatest influence upon the group ranking, as (b) having the greatest knowledge regarding the candidates, and as (c) being least satisfied with the group ranking. (Read L as Leader, F as Follower, and NR as No Response.)

† Rows do not always yield a total equal to N, since some subjects named two persons. For this reason, no tests of statistical significance have been made.

that they possessed superior knowledge. (Four supervisory followers and three participatory followers claimed having superior knowledge.)

Part (c) discloses that more supervisory leaders than participatory leaders identified themselves as being the person in their group least satisfied with the group ranking. Followers designated their leaders as "least satisfied" in relatively few instances. (Six supervisory followers and five participatory followers asserted that they personally were least satisfied.)

Subjects were asked to describe the atmosphere or feeling tone of their group by means of three 140 mm linear rating scales. If a value of 70 can be taken as the point of neutrality, Table 39.6 discloses that all subgroups

TABLE 39.6

## RATINGS OF GROUP ATMOSPHERE

Mean Ratings of Group Atmosphere (in Millimeters on Three 140 mm Linear Rating Scales)

(a) Friendly, Enjoyable (0)	Hostile, Antagonistic (140)
(b) Interested in Task (0)	Indifferent to Task (140)
(c) Efficient, Productive (0)	Inefficient, Unproductive (140)

Subgroup	N	a	b	c
Supervisory leaders	9	35	54	50 *
Participatory leaders	9	16	27	27
Supervisory followers	33	28 †	65 †	62 †
Participatory followers	32	23 ‡	41 ‡	37 ‡

\* Based on 8 cases: 1 no response.

† Based on 32 cases: 1 no response in each instance.

‡ Based on 31 cases: 1 no response in each instance.

rated their group discussions as generally friendly and enjoyable, rather than hostile and antagonistic; as interested in the task, rather than indifferent to the task; and as efficient and productive, rather than inefficient and unproductive. However, as compared to supervisory subjects, participatory subjects (leaders or followers) rated their discussions as being more friendly and enjoyable, more interested in the task, more efficient and productive. It is also interesting to observe that participatory leaders found the atmosphere more enjoyable than their followers, while supervisory followers found the atmosphere more enjoyable than their leaders. Differences between followers are statistically significant at the 1% level for interest in task and for efficiency. Differences between leaders are statistically significant at the 5% level for all three rating scales.

Subjects were asked whether they found the task worthwhile and interesting. Of the subjects who responded, Table 39.7 shows that participatory subjects tended to regard it as interesting and worthwhile, while supervisory subjects tended to regard it as not interesting and not worthwhile. Table 39.7 also shows that participatory subjects tended to report that



TABLE 39.7

## EVALUATIONS OF THE EXPERIMENTAL TASK

Percentage of Subjects who Report the Task as Interesting, Worthwhile; and Extent to which it is Meaningful to Undertake the Final Individual Ranking.

SUBGROUP	N	INTERESTING			WORTHWHILE			MEANINGFUL		
		Yes	No	NR	Yes	No	NR	Yes	No	NR
Supervisory leaders	9	67	33	0	33	67	0	22	45	33
Participatory leaders	9	78	22	0	67	22	11	78	11	11
Supervisory followers	33	30	55	15	27	61	12	21	58	21
Participatory followers	32	60	31	9	40	35	25	56	13	31

they found it meaningful to prepare a final individual ranking, whereas supervisory subjects tended to regard the formulation of the final ranking as not meaningful. The dependence of interest and meaningfulness upon the type of leadership is statistically significant for the followers. Statistical significance fails in the case of judgments of worthwhileness. Leaders are too few in number for the application of such tests. It may be observed, however, that their results are consistent in direction with those of the followers.

Subjects were also asked to report upon their motivation at the time of preparing their final individual rankings. They were asked whether they were motivated to be consistent with their own first rankings, to be consistent with their group, to avoid being influenced by their group, and whether they experienced conflict. Table 39.8 reveals that no important differences were found in these respects. For this reason no tests of statistical significance have been made.

TABLE 39.8

## REPORTS UPON MOTIVATION FOR THE FINAL RANKING

Frequencies with which Subjects Reported that they were Motivated (*a*) to be Consistent with their First Ranking; (*b*) to be Consistent with their Group; and (*c*) to Avoid being Influenced by the Group. Frequencies with which Subjects Reported that they (*d*) Experienced Conflict.

Subgroup	N	a	b	c	d
Supervisory leaders	9	6	3	4	1
Participatory leaders	9	5	6	2	4
Supervisory followers	33	17	14	6	10
Participatory followers	32	17	17	8	10

## Summary and Conclusions

Members of several laboratory classes were asked to rank 12 potential presidential nominees in their own individual orders of preference. Subjects were then divided into groups of four or five each. Leaders were elected, drawn aside, and instructed to proceed in a participatory or a supervisory manner. Group rankings were then formulated. A final ranking was then secured from each individual. The data consist of rank difference correlations between the initial individual rankings, the group rankings, and the final individual rankings.

The results show that participatory leadership is more effective than supervisory leadership as a technique for effecting changes in attitudes. Conversely, the results indicate that subjects are more likely to withstand the impact of group opinion under supervisory leadership, probably indicating that no strong group opinion is formed under this condition.

The final rankings of participatory subjects were found to correlate more with group rankings than with their own initial rankings. The final rankings of supervisory subjects, on the other hand, were found to correlate higher with their own initial rankings than with the rankings formulated in their group discussions.

Responses to a supplementary questionnaire reveal that (a) participatory subjects were satisfied with group rankings more often than supervisory subjects, although the differences do not always reach significance; (b) participatory subjects more often reported the task as being interesting and meaningful; (c) participatory leaders rated their group discussions as being significantly more friendly and enjoyable; both participatory followers and leaders noted the task as being significantly more interesting, and as being more efficient and productive.

The experiment is further discussed as to its suitability for use in laboratory work in experimental social psychology.

## REFERENCES

1. Bavelas, A. Morale and the training of leaders. In G. Watson (Ed.), *Crisis morale*. Boston: Houghton Mifflin, 1942. Pp. 143-165.
2. Lewin, K., Lippitt, R., & White, R. K. Patterns of aggressive behavior in experimentally created "social climates." *Journal of Social Psychology*, 1939, 10, 271-299.
3. Lippitt, R. An experimental study of the effect of democratic and authoritarian group atmospheres. *University of Iowa Studies in Child Welfare*, 1940, 16, No. 3, 43-195.
4. Roethlisberger, F. J., Dickson, W. J., & Wright, H. A. *Management and the worker*. Cambridge: Harvard Univ. Press, 1939.
5. Stogdill, R. M. Personal factors associated with leadership: A survey of the literature. *Journal of Psychology*, 1948, 25, 65-71.

## Leader Behavior and Member Reaction in Three "Social Climates"

Ralph White and Ronald Lippitt

This investigation was carried out in two different parts: an exploratory experiment and a second more extensive research. The primary aim of the first study was to develop techniques for creating and describing the "social atmosphere" of children's clubs and for quantitatively recording the effects of varied social atmospheres upon group life and individual behavior. Two degrees of control of group life, labeled "democratic" and "authoritarian," were used as the experimental variables. The second study had a number of purposes. The one most relevant to this report is to examine the effects upon individual and group behavior of three variations in social atmosphere, labeled "democratic," "authoritarian," and "laissez-faire." The actual meaning of the adjectives used to label these social climates is necessarily somewhat different from the meanings attributed to them in political and economic discussions. The accompanying tabulation describes briefly the chief characteristics of these three treatment variations.

In the first study (Experiment I), the same leader met with two clubs. One group was led in a democratic manner, the other in an autocratic style. Both groups had five members, ten years of age. The behavior of the leader and the members was recorded by observers. A fuller description of the experimental plan for this investigation may be found in Lippitt (1).

In the second study (Experiment II), four groups of ten-year-old boys were used. These were also five member clubs which met after school to engage in hobby activities. The groups were roughly equated on patterns of interpersonal relationships, intellectual, physical, and socio-economic status, and personality characteristics. Four adult leaders were trained to proficiency in the three leadership treatments. The leaders were shifted from club to club every six weeks, each one changing his leadership style at

Condensed from a fuller discussion contained in Chapters 3 and 6 of a forthcoming book by the same authors. Reprinted by permission of the authors.

AUTHORITARIAN	DEMOCRATIC	LAISSEZ-FAIRE
<ol style="list-style-type: none"> <li>1. All determination of policy by the leader</li> <li>2. Techniques and activity steps dictated by the authority, one at a time, so that future steps were always uncertain to a large degree</li> <li>3. The leader usually dictated the particular work task and work companion of each member</li> <li>4. The dominator tended to be "personal" in his praise and criticism of the work of each member; remained aloof from active group participation except when demonstrating</li> </ol>	<ol style="list-style-type: none"> <li>1. All policies a matter of group discussion and decision, encouraged and assisted by the leader</li> <li>2. Activity perspective gained during discussion period. General steps to group goal sketched, and when technical advice was needed, the leader suggested two or more alternative procedures from which choice could be made</li> <li>3. The members were free to work with whomever they chose, and the division of tasks was left up to the group</li> <li>4. The leader was "objective" or "fact-minded" in his praise and criticism, and tried to be a regular group member in spirit without doing too much of the work</li> </ol>	<ol style="list-style-type: none"> <li>1. Complete freedom for group or individual decision, with a minimum of leader participation</li> <li>2. Various materials supplied by the leader, who made it clear that he would supply information when asked. He took no other part in work discussion</li> <li>3. Complete nonparticipation of the leader</li> <li>4. Infrequent spontaneous comments on member activities unless questioned, and no attempt to appraise or regulate the course of events</li> </ol>

the time of this transition. Thus, each club experienced each of the leadership styles under different leaders. All clubs met in the same place, and did the same activities with similar materials. The behavior of the leaders and the reactions of the boys were observed during every meeting. The members and their parents were also interviewed concerning their feelings about the club in the case of the boys, and the nature of parent-child relations in the case of the home visits. A more complete description of the experimental plan for the second study may be found in Lippitt and White (2).

In the following pages we shall first describe in some detail the nature of the leadership behavior typically used in each of the three leader treatments. The second part of this report describes the behavior of the members when under the direction of a leader using each of the variations.

### Leader's Behavior

To some extent, the observation of what the leaders actually did was a process of discovery, both for the observer and for the leaders themselves. As we shall see, some of the statistically-significant differences in leaders'



behavior could not have been directly deduced from our central definitions, although they tend to be consistent with these role definitions. The adult who was faced with the constantly changing problems of leading a group of children found himself doing things which he could never have anticipated he would do. And the unanticipated things which the leader with the predetermined autocratic philosophy did were quite different from the things which he did in the same situations when he changed to the democratic role. The data described the different types of leader-behavior which resulted from the attempts at consistent application of the varying philosophies of leadership represented by the definitions of autocracy, democracy and laissez-faire.

Figure 40.1 presents a summary graph of the leader behavior in terms of the percentage of total behavior in each category. These percentages are based upon the grand total of behavior in a given style of leadership over six meetings. All differences concerning leadership behavior which are discussed are statistically significant at the 5% level of confidence or better.

### 1. *Giving Orders*

Statistically, the chief single characteristic of our autocratic leader role, as distinguished from both democracy and laissez-faire, is the giving of orders. Forty-five per cent of the verbal behavior of the autocrats, in contrast to 3% in democracy and 4% in laissez-faire, consisted of this simplest form of the imposition of one human will upon another. Many of these were direct orders or statements in the imperative form:

"Get your work aprons on."<sup>1</sup>

"All right, put your brush away."

o "Each of you turn yours over and try on the back."

And many were indirect orders, not in the imperative form, but recognizable as autocratic if given in certain contexts and in certain tones of voice:

"Now we need some plaster."

"That should be about two-thirds full."

"Today we've got to paint and letter the sign."

"Before we start there's something we have to do. That's to make work aprons."

Such orders clearly correspond to the part of our strict experimental definition of autocratic leadership which calls for "high goal and means control."

<sup>1</sup> The illustrations used throughout this chapter are sample episodes or units of descriptions taken from the continuous research records of the group process.

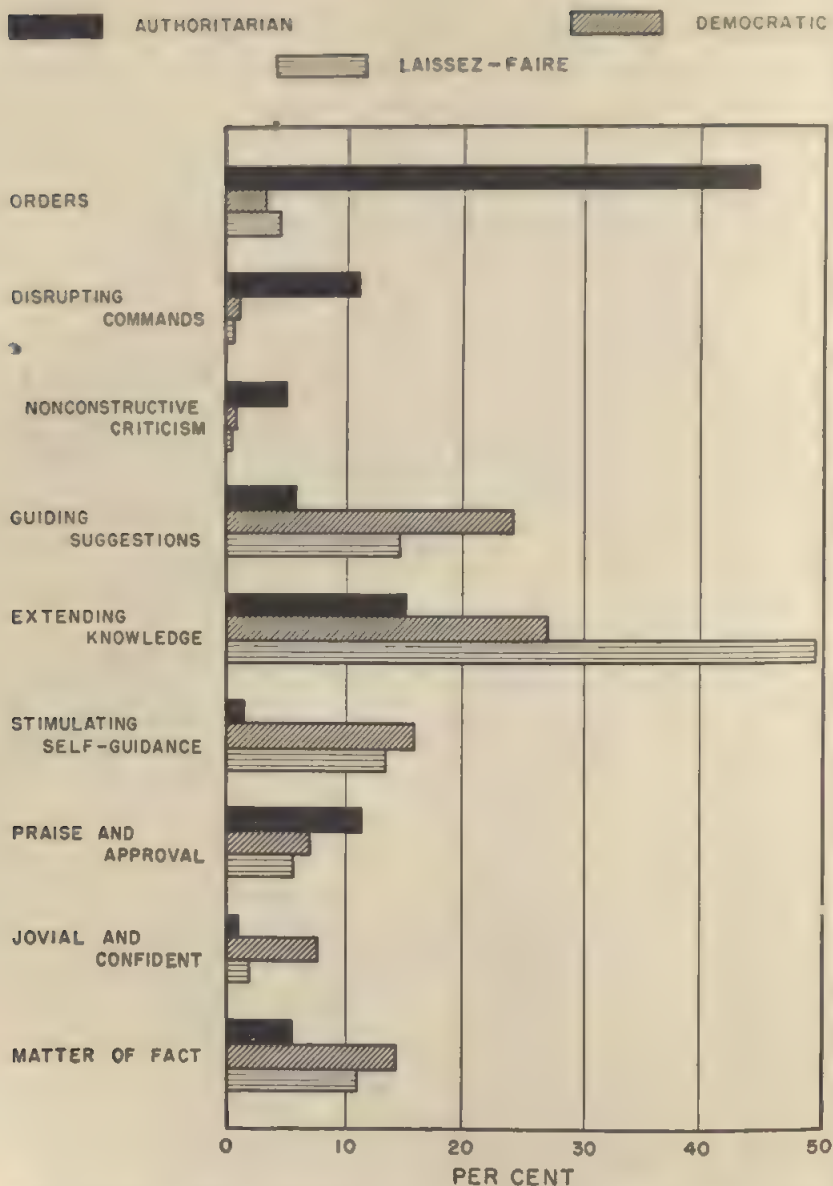


FIG. 40.1. Comparison of behavior of average authoritarian, democratic and laissez-faire leader.

## 2. *Disrupting Commands*

A more ambiguous criterion of means and end control is the giving of "disrupting commands"—commands which cut across an expressed wish or ongoing activity of a member of the group, and substitute for it some wish of the leader. Such commands represented 11% of the verbal behavior of our autocratic leaders, as contrasted to 1% or less for our democratic and laissez-faire leaders. For example:

"I want to saw."

"No, Bill, you and Hamil make another leg," Mr. Bohlen says he wants "two fellows." Fred volunteers, "I let Reilly and I do it." But Mr. Bohlen appoints two others: "I'm going to let Sam and Leonard do this." Mr. Bohlen consistently refuses to let Fred do what he wants to do—painting on the sign.

The data show that the laissez-faire leaders were consistent in restraining themselves from initiating goals and means.

## 3.4. *Non-Objective Criticism and Praise*

A third type of behavior which was more characteristic of our autocratic leaders was "non-objective criticism"—criticism which was adverse and personal in character and which did not point objectively toward improvement by suggesting a reason for failure or a way of doing the thing better. Such criticism constituted 5% of the leaders' behavior in our autocratic atmospheres and 1% in the democratic and laissez-faire atmospheres. For example:

"You're not making a sack, you're making an apron."

"No, you can't make it like that. That isn't a good job at all."

"Who was it left the tool box on the floor again?"

<sup>10</sup> Praise was also found more often in the autocrats' behavior (11%) than in that of the democratic (7%) or laissez-faire (5%) leaders. For example:

Fred is doing a nice job of lettering, and Mr. Bohlen compliments him on it—the second compliment he has given him today. "That's the best side view there. But I think I want a front view."

(In democracy) Bill to Mr. Rankin: "Eddie really did a swell job on that, didn't he? I couldn't do as good a job as that."

Mr. Rankin: "Yeah, it's swell."

Different kinds of praise in different contexts can obviously (like different kinds of criticism) have widely different psychological meanings. Yet it is probably significant, from more than one standpoint, that *both* praise and criticism were especially characteristic of our autocratic leaders. From our present standpoint, however, the most interesting

implication of the large amount of both praise and criticism is that both suggest an emphasis on *personal evaluation from the leader's standpoint*. Both suggest an emphasis on a status-hierarchy, and both suggest that the leader is setting himself up as chief judge of the status and achievement of the members of the group.

### 5. Guiding Suggestions

We come now to the forms of leader-behavior that were more characteristic of democratic or of laissez-faire leadership than of autocratic. For example, as a direct counterpart of the order-giving which was characteristic of the autocratic style, we find "guiding suggestions" to be one of the two most frequent forms of verbal behavior on the part of democratic leaders. It represents 24% of the democratic leaders' behavior, as compared with 6% of the autocrats' behavior. The line between "guiding suggestions" and the indirect type of order-giving is, of course, somewhat difficult to draw. However, the reliability of making this distinction in the coding of the conversation was satisfactory. The way in which we defined "guiding suggestions" can be seen from the following examples, which were classified in this way:

"Did you ever try going the other way—with the grain?"

"That's a knife-sharpener so you can have sharp knives to carve wood with."

Bill holds up his model for Mr. Rankin to see. "That's pretty weak there," Mr. Rankin: "If you don't get it any thinner I think it will be all right."

Mr. Rankin sits down beside Van as he works. "That's good, Van, because if you leave as big a piece as that you can try again."

The distinguishing characteristic in each of these examples is that a given course of action is implicitly or explicitly related to one of the boy's *own* purposes. Very similar in psychological meaning is the *clarifying of alternatives*, between which the boys themselves are free to choose (which was included in this same category):

"Motion carried. Now the question is, who wants to be the G-man?" (All speak.) "Should we choose from everybody that wants to be, or just those that haven't had a chance yet?"

And similar, too, is the giving of suggestions by example rather than by precept:

Reilly discovers that Mr. Rankin is making papier mâché and stops throwing to join him. He tears up paper too, and so does Fred. Leonard stops throwing. The group is gathered around Mr. Rankin and is listening to him and paying attention.

Bill: "Let's get ready to go home."

Mr. Rankin (picking up a broom): "We don't have much cleaning up to do today."



It should be especially noticed that a very active readiness to give guiding suggestions at precisely those moments when they are appropriate and appreciated, and to point out the operating procedure which lies behind the efficient action, was in practice the chief single difference between the democratic and laissez-faire leaders. In laissez-faire such suggestions made up only 14% of the leader's verbal behavior, as compared with 24% in democracy and 6% in autocracy.

In other words, democracy (as distinguished from laissez-faire) did not imply freedom alone, i.e., a relatively passive "regard" for the child's welfare, in the sense that the child's desires were not needlessly thwarted. If either individual welfare or group achievement is to be fully attained, the democratic leader took the viewpoint that it is necessary to have also a very active respect for those individual desires in the sense of a constant active thinking about how they can best be realized. Only by such full participation in the life of the group can the leader really lead. For instance, the following are examples in which a boy wanted guidance and did not get it. In some situations exactly the same behavior by the leader—throwing back the question the boy asked—would be a constructive device for stimulating self-guidance. In these situations, however, it seemed to be merely a result of insensitivity to the boy's legitimate needs for goal or means suggestions:

Reilly: "Where can we put this up?"

Mr. Rankin: "Where would you like to put it up?"

Leonard: "How do you cut it?"

Mr. Rankin: "What do you think? Cut it in the right shape. . . ."

But, at the other extreme, the democratic leader had to avoid over-complicated suggestions, such as the following, both of which are double-barreled and at least slightly confusing:

"Who wants to help who to get things finished up?"

"Have you been thinking about a G-man Club? Do you want a meeting now, fellows?"

The effective use of guiding suggestions seems to depend on timing. The democratic leader had to have a keen sense of awareness of the shifting momentary needs and interests of the boys so that he could make his suggestions at just the moments when they fitted into those interests.

## 6. Giving Information

Another major activity of the democratic leader was simply giving information, or extending the knowledge of the members of his group. This constituted 27% of the democratic leaders' behavior, and 15% of the autocratic leaders'. (In laissez-faire it was 49%, which is natural in view

of the fact that the laissez-faire leaders' role was explicitly confined very largely to the giving of technical information when asked for it.) Actually the amount of technical information given by the three leader types was not significantly different, even though the proportion was so much greater in laissez-faire. Here are some typical examples of information-giving:

Finn (holding up orangewood stick): "What's this for?"

Mr. Rankin: "That's an orangewood stick, and the flat end is for smoothing down this way." (Demonstrates.) "This is more curved here, and you can get a smoother tip of soap because it's narrower than this."

There is a dispute between the two groups about the ages of the knives. . . . Reilly, Sam and Fred listen to Mr. Rowe talk about the ages of the knives. They are all very much interested.

(In laissez-faire) Finn (very plaintively): "Why can't we have a crime?"

Mr. Davis: "I could have a crime for you next week if you wanted me to."

One meaning of information-giving, as compared with either orders or guiding suggestions, is that there is almost no chance of its being a form of social influence or pressure. The information is simply there. The boy can take it or leave it, use it or not use it, depending on his needs at the moment.

## 7. *Stimulating Self-Direction*

Less frequent numerically is a group of leader-behaviors which we have called "stimulating self-direction." This type of behavior was fairly frequent in democracy and almost nonexistent in autocracy; the percentages were, respectively, 16 and 1.2. Although this made up 13% of the behavior of the laissez-faire leaders, this only represented an average of 30 such acts per meeting, as compared with 59 by democratic leaders. The meaning also tended to be quite different. In laissez-faire this type of leadership act tended to be a throwing back of responsibility on the individual member. In the democratic style it was more frequently a teaching of the total group to learn to depend on itself as a group.

One way of stimulating democratic self-direction in setting new goals and choosing means is to inculcate the democratic procedure directly: group decision, majority vote, free discussion with an opportunity for every interested person to have his say, secret ballot when appropriate, delegation of special tasks to committees, minority acceptance of majority decisions, etc. For example:

Finn: "Guess I'll change the name of our club."

Bill: "No, it's still the Law and Order Patrol."

Mr. Rankin: "If the group wants to change the name, they can—if a majority wants."

Bill: "Eddie should be captain and Van should be a lieutenant assistant."

Van: "Hey, that's lower than I am now, and I got a high score!"

Mr. Rankin: "In an army, the general decides the promotions, but here, even if it is organized like an army, it seems to me the group ought to decide who should get the promotion."

Bill: "Now you stay out of it and we three will vote." Mr. Rankin steps in to confer with Bill about taking a vote. He gives him a formal wording, "All in favor say aye, opposed, no," etc. (Bill is especially keen on formality and "having things regular.")

Finn votes for adjournment, and the motion passes. Bill starts to ignore the vote and keep on with the discussion. Mr. Rankin: "All right we don't have any meeting now if the majority votes to adjourn."

It will be noticed that in some of the above examples the role of the democratic adult leader is chiefly one of supporting or bringing to clear expression the feeling of the majority. He is a catalyst, releasing energies that already exist in the group. This was done formally by insisting on a majority when dispute had arisen, and backing up the majority with his own prestige. It was also done informally by simply listening to and drawing out the less articulate or less vociferous members of the group. It is also sometimes necessary to support a minority, especially if it is opposed by an even smaller minority. This occurred, for instance, when Finn and Hamil were refusing to accept the arbitrary leadership of Bill. The other two members did not take part in this little contest so that it was actually a conflict of two against one.

Bill: "It's time for our meeting. The second half of our meeting will come to order. Come on boys."

Hamil: "That's what you think." He and Finn go just outside the burlap curtain surrounding the enclosure, but lift the curtain; it is cooler outside because the moving picture lights make the enclosure itself very warm.

Finn: "We'll just listen from out here." Bill doesn't get the response he wants and pouts while he takes up his whittling again.

Mr. Rankin: "I shouldn't think a good chairman would whittle while the meeting was going on."

Bill: "Well, I can't get any of the guys to come." Mr. Rankin goes over to the other two and holds up the curtain. Eddie and Van go too so that four of the five boys are gathered at the edge of the enclosure.

Mr. Rankin: "The meeting is going on over here." (A satisfactory meeting is held, with Bill fully participating, as well as Hamil and Finn.)

The commonest form of stimulating self-direction, however, was simply to follow up a particular boy's ideas, encouraging him to elaborate them and think them through:

Mr. Rowe: "Let's all sit down and talk it over. Sam suggested glass painting. How does it go, Sam?"

Sam: "Get a picture under a piece of glass."

Mr. Rowe: "How would it be if I got a big piece of glass and a big painting? Does the paint come in tubes?"

Sam: "The stuff in bottles is better."

Mr. Rowe: "Would everybody like to do it?"

Reilly: "I'd like to do it."

Lyman: "I think I'd like to do it."

Van (in a doubtful tone): "I was thinking of a canoe [for soap carving]."

Mr. Rankin: "I think a canoe is probably the best idea. Can you see there [picture of canoe model] how almost straight it is for a distance in the middle?"

### 8. "Jovial" and "Confiding" Behavior

The last type of conversation that was measured and that significantly distinguished the democratic club atmosphere from the other two is one which, for the want of a better term, has been characterized by the two terms "jovial" and "confiding." It represents the purely social aspect of the leader's behavior and was far more characteristic of our democratic situation than of either autocracy or laissez-faire (8% as compared with less than 1% in autocracy and in laissez-faire). For example:

Fred talks and laughs with Mr. Rowe—far different from his behavior with Mr. Bohlen.

There is a very nice relationship between Mr. Rowe and the group. . . . He seems to be having the most fun of all. . . .

(The acute conflict between Fred and Mr. Bohlen is still fresh in everybody's mind; and on this day Fred is absent. The following topic of conversation is therefore a natural one.) Mr. Rowe: "Does Fred get into much trouble with the teacher?"

Sam says, "I'll say!" and Lyman adds, "He got sent out of the room two times. He always does something."

This is the clearest instance of a type of behavior which was not consciously planned, but which developed as sort of a by-product of the democratic leader's total relationship to his group, usually by the initiative of group members. It has nothing directly to do with freedom or lack of freedom, but it obviously does have something to do with openness of communication which develops as a result of the relationship created by the other types of leadership behavior described above.

This completes our list of the types of conversation which were statistically analyzed and which clearly differentiated one or more of the three atmospheres. A number of incidental observations can be added, however, which were not statistically analyzed, but which help to round out the picture.

### *Democratic Criticism and Praise*

Although it did not occur frequently enough for statistical comparison, the observer noted that the democratic leaders tended to use praise and



criticism in a different way from the autocratic leaders. The democratic leaders recognized that "training in procedures" seemed to mean (a) helping individuals to learn the criteria and methods for evaluating their own work without dependence on the adult as well as (b) helping the group to learn the methods of mutual support and cooperative operation as a group. This first type of training we find exemplified in such illustrations as:

Mr. Rankin: "That's good, \_\_\_\_\_, because if you leave as big a piece [of soap during soap-carving period] as that you can try again [if the first try fails]."

Leader: "I think that's going to be pretty wobbly [piece of box furniture]. Can you guess why I think so?"

Boy: "Maybe because there are so many bent nails and none that go through."

By this type of praise and criticism, the democratic leaders attempted to extend their assigned function of teaching a group procedure for setting goals and means to teaching of criteria and methods for *evaluating* goals and means. This seemed to be a natural part of the same leadership role.

### ***Equalitarian Behavior***

It may be worth while also to cull a number of illustrations not falling under any one topic that has already been discussed, but illustrating again, in a variety of ways, some additional implications of respect for own member's goals, and means which seem to flow from the leadership patterns that were defined for the leaders. There are, for instance, some egotistical uses of the pronoun "I" by autocratic leaders which are clearly lacking in that sort of respect:

"I'm going to pick out the best one when you get done."

"Guess you'll have to put some more powder in that. I don't like it yet."

By contrast, the democratic leaders often showed equalitarian or even self-effacing behavior, and an absence of concern about their status and dignity. They took off their coats, they set or squatted instead of standing, they worked just as the boys did and showed that they were enjoying the work just as the boys did. Other illustrations:

Mr. Rowe subordinates himself to the newly elected boy-leader. "What should I do for cleanup, Sam?"

Mr. Rankin, on the first day of democracy in the Law and Order Patrol (after a period of *laissez faire*) finds Bill in a position of temporarily revived leadership. He does not challenge this leadership, but helps Bill when he can do so without antagonizing the others.

Bill is administering a test which he has carefully made up, on crime detection agencies in the community, safety rules, etc. Mr. Rankin asks: "Are you testing me too?"

Bill: "No."

Mr. Rankin (with a smile): "I'd probably get the worst grade."

Observer writes: "Another characteristic of the democratic behavior of Rankin is his emotional expressions with the boys—'Oh,' 'Aha'—and his going thoughtfully into everything the children think they want to do."

On the other hand, the democratic leaders sometimes did not hesitate to accept delegated authority when it was unequivocally handed to them. Mr. Rankin suggests a committee to make up the crime, but the group wants to leave it to him this next time. He agrees.

In other words, the democratic leader's lack of concern about his own dignity was not a blind or compulsive self-effacement; it was a sensitive awareness of and respect for the status needs (own social goals) of the boys in the group as well as of the various other social needs that they might have in this situation.

### *Role-Changes by the Same Person*

Did the four leaders in this experiment actually change their behavior to be consistent with the leadership policy they were supposed to be representing, or did they primarily "keep on being like themselves" in each of the three clubs they led? The data clearly reveal that each leader was more like the others in the same role than he was like himself from one role to another. The interviews with each boy, in which the boy compared his leaders, also indicate that the boys were actually reacting to these behavioral differences rather than to other unchanging aspects of the leaders' personalities. Certainly there must have been a core of enduring characteristics which each individual leader took with him from one club to the other. These characteristics probably exerted some influence on the perceptions and reactions of the club members, but these were evidently minor or irrelevant as far as the leader effect on the club life was concerned in the dimensions we have studied.

### *Summary of Leader Behavior*

We have reviewed the statistical analysis of leader behavior, with illustrations of leader behavior taken from the club records. It is clear that the leaders did behave differently in carrying out then three types of role-assignment. These differences seem to represent consistent behavioral definitions of the three types of leadership policy which we want to compare.

### *Major Differences in Boys' Behavior*

The glimpses given above may have conveyed some of the "feel" of the atmosphere resulting from the three types of leadership. We will now

present the results of the experiments more fully and systematically, in terms of the chief statistical differences between the boys' behavior under autocratic, democratic, and laissez-faire types of leadership. Summary graphs will be found at the end of the chapter. The findings can be grouped under six major generalizations, which are discussed in the remainder of this chapter.

### *Laissez-faire Was Not the Same as Democracy*

Laissez-faire was less organized, less efficient, and definitely less satisfying than democracy to the boys themselves. Since there is a general tendency to attribute to democracy certain results which are actually results of laissez-faire, it is necessary to make this distinction very clearly before going on to any further thinking about differences between democracy and autocracy. The boys' behavior in laissez-faire differed from their behavior in democracy in the following ways:

1. Less work was done, and poorer work. In democracy, the time periods during which there was general absorption in constructive activity, or psychological involvement in the work situation, represented 50% of the total time; in laissez-faire, 33%. In democracy, the time periods of general out-and-out loafing constituted 0.2% of the total time; in laissez-faire, 5%. And in *quality* of work accomplished, the difference was considerably greater than these figures indicate. The lack of active guiding suggestions in laissez-faire often resulted in disorganization and in failure and setbacks in work, which were discouraging and exasperating. Some outright aggression can be directly attributed to such work failures, as well as much loss of interest in the job that was being done. For instance:

Eddie and Bill have mixed the plaster-of-Paris before getting the sand and making a print. Mr. Davis doesn't step in to tell them it will soon get hard. Van tries the plaster-of-Paris and finds it quite stiff. Eddie, Bill, and Van finish a handprint and go to pour the plaster-of-Paris, but find it has hardened in the can. Bill pounds at it. Eddie stamps in the sand with his shoe, spoiling the print they had prepared. Finn and Hamil finish some new guns. Everybody is now milling around idly except Bill, who keeps on trying to get the hard plaster-of-Paris out of the can. Horseplay is about to begin.

Fred breaks his cast, is discouraged, goes on and tears up the whole thing. (Later in the same hour, he was the leader in destroying the work of the "Monday gang.")

Fred watches, sitting on a stool he made. A leg falls off. He breaks up the rest of it.

2. They played more. Play-minded conversation with other boys was more than 2.5 times as frequent in laissez-faire (33 as compared with 13 in

democracy; significant at the 1% level). Pure silliness was included in this category. For instance:

Leonard (hearing the term "orange sticks"): "Orange sticks—pick up sticks."

Ray: "Hooray, hooray—J-O-W-A-I"

### *Democracy Can Be Efficient*

Since arguments for autocracy often take the form of claiming that democracy is not efficient enough to accomplish a certain end (such as winning a war, reducing production costs, or educating a child in necessary basic skills), it is of interest to consider the degree of efficiency of the democratic groups in our experiments. Did these groups achieve the ends the boys themselves wanted to achieve?

On the whole, they did. The question is not a simple one, since the boys did not want work achievement to the exclusion of other goals. (And in this respect, of course, the situation was also not comparable with the many situations in which society demands that a certain end be accomplished by methods that are inherently distasteful.) Our clubs were recreational clubs. They were "to have fun," and the boys came to them expecting to have fun through sociability, and probably through occasional good-natured horseplay, as well as through carpentry, painting, and organized crime-games. A respect for the boys' own legitimate goals would perhaps necessitate evaluating "efficiency" as much in terms of the achievement of these social goals as in terms of the achievement of work goals. And certainly from this combined standpoint democracy was decidedly more "efficient" than either autocracy or laissez-faire, since it achieved simultaneously both goals, while autocracy, in the main, achieved only work goals, and laissez-faire achieved (if anything) only social goals. But even from the narrow standpoint of work goals alone, the evidence suggests that in our situation the democratic groups were about as efficient as the autocratic ones.

This conclusion is based upon an over-all impression of the observers and experimenters. It is also based on a balancing of certain factors of efficiency which appeared to be more prominent in autocracy and others which appeared to be more prominent in democracy. On the one hand, there was a large quantity of work done in autocracy—or at least, in those autocratic groups in which the reaction to autocracy was a submissive one. In such groups the time periods of general absorption in work constituted 74% of the total time, as compared with 50% in democracy, and 52% in the one instance (in the second experiment) of an aggressive group reaction to autocracy. On the other hand, the amount of genuine interest in work was unquestionably higher in democracy. This was shown by a somewhat larger amount of "work minded" conversation



in democracy (63 such remarks per child as compared with 53 in the aggressive reaction to autocracy and 52 in the submissive reaction). This difference is not significant at the 1% level, but it does strongly suggest that work-mindedness was at least as great in democracy as in autocracy. Some illustrations of "work-minded" remarks: \*

"Let's see, who's got the saw?"

"I'm going to get a chisel to chisel that out with."

"How come some of these pieces are bigger than others?"

"Because they belong to the end of the wing out here."

"I guess all these pieces go together."

"Well this is supposed to stand up straight."

More significantly, the difference in amount of genuine, spontaneous work interest was shown by the difference in the boys' behavior *when the adult leader left the room*. Typically, the boys in democracy kept right on working while their leader was present or not, while in autocracy when the leader left, the boys stopped working as if glad to be relieved of a task which they "had" to do. In democracy there was a very slight drop in proportion of general work involvement during the leader-out periods—from 50% to 46%. On the other hand, in the one group which reacted aggressively to autocratic leadership, the drop in work involvement was from 52% to 16%, and in the three groups reacting submissively it was from 74% to 29%.

There was, finally, an impression on the part of the experimenters that both work and play showed a higher level of *originality* or creative thinking in the democracies than under either of the other types of leadership. There was a larger amount of creative thinking about the work in progress than in autocracy, and it was more sustained and practical than in *laissez-faire*.

### ***Autocracy Can Create Much Hostility and Aggression, Including Aggression against Scapegoats***

The word "can" is important here, because this reaction did not always occur. It occurred to a very marked degree in Experiment I, and to some degree in one of the four groups that took part in Experiment II; but the other three groups in Experiment II showed, instead, a "submissive" reaction in which there was significantly *less* overt aggression than in democracy.

The clearest evidence comes from Experiment I. For example:

1. "Dominating ascendance" occurred 392 times in the autocratic group and only 81 times in the democratic group. The category "ascendance" showed no significant difference between the groups (63% of all

child-to-child behavior in autocracy, and almost as much—57%—in democracy). But the reason for this apparent similarity was that the term "ascendancy" was so broad as to be somewhat meaningless psychologically. When three kinds of ascendancy were distinguished, "dominating," "objective," and "friendly" ascendancy, it was found that dominating ascendancy was highly characteristic of the autocratic group, while objective and friendly ascendancy were characteristic of the democratic group. Some illustrations of dominating ascendancy:

"Shut up."

Two children look in, and Sarah and Jack repulse them with comments of "not wanted."

"You put them away; you dumped them."

"Give me some of that paint." (Remarks of this sort are classified as dominating or objective, depending upon context and upon tone of voice. In this case it was classed as dominating.)

"Get a pan of water, Jack."

"Why don't you get it yourself?"

Friendly ascendancy, on the other hand, occurred 24 times in the autocratic group and 230 times in the democratic group:

"Let's do coloring."

"Carry the bottles over there."

"You've got to get all the cracks filled in."

"Better fill in your side there."

2. Definite hostility occurred 186 times in the autocratic group and only 6 times in the democratic group. It represented 18% of all the recorded social interactions in the autocratic group, and less than 1% of all the interactions in the democratic group. (This category is included in the larger category of "dominating ascendancy.") Some illustrations:

"You guys haven't got nothing done yet."

"Hey, you, don't throw water on my hair."

"Look out, Tom, quit throwing things."

"Don't start crabbing. I wouldn't talk too much yourself."

"Oh God, Tom, don't you know anything?"

3. Aggressive demands for attention occurred 39 times in the autocratic group and 3 times in the democratic group. For example:

Joc (in a loud voice): "I guess this is a mighty fine job I'm doing!"

Tom: "I'm a lot smarter than you are. Boy-oh-boy, can I ever brag."

Harry: "I'll say you can."

Joe: "Sure, I've got three radios; I ought to know."

All the others: "You have not!"

Joe: "Oh yes I have."

4. Destruction of own property was conspicuous at the end of the meeting of the autocratic group, and did not occur at all in the democratic group:

Peculiar actions begin after the leader (in the autocratic group) announces that there will be no more meetings. The leader asks Harry and Jack to put more paper on the floor to work on. They put it down and then run and jump on it time and again in a wild manner. The masks are divided out as had been decided by the voting, and Jack immediately begins to throw his around violently, pretending to jump on it. He throws it down again and again, laughing. Ray wants to know if it won't break, then starts to throw his down too. Later Jack and Harry chase each other around the room wildly with streamers of toweling.

5. Scapegoat behavior was conspicuous in the autocratic group, and scarcely occurred at all in the democratic group. "Scapegoat behavior" is here defined as the concentration or polarization of group aggression against a single "innocent" object, i.e., a person or group which does not actually threaten or frustrate the group to an extent comparable with the aggression that occurs. Presumably in this case the autocratic leader was the source of most of the frustration in the autocratic group, yet only a small part of the resulting aggression was directed against him; most of it was directed by the club members against each other. It could therefore be called "displaced aggression." When this displaced aggression is concentrated against a single person, as occurred twice during the course of the meetings of the autocratic group in Experiment I, it can be called "scapegoat behavior."

### *Autocracy Can Create Discontent That Does Not Appear on the Surface*

Less dramatic but more fundamental than the question of aggression is the question of total need satisfaction. Under which major type of leadership is there likely to be more satisfaction of the boys' own needs, and why?

The answer is far from simple. There is no reason to think that democracy is necessarily superior from the standpoint of immediate personal satisfaction. It is a well-established fact that autocracy is often satisfying to some of the needs—the regressive needs, perhaps—of the ruled as well as the rulers. There can be satisfactions in passivity, satisfactions in not having to think, satisfactions in identifying (on an irreal level) with a strong, dominating leader image. On the other hand, it is also obvious, and needs no proof, that autocracy is always frustrating insofar as it imposes barriers to the satisfaction of individual needs. The real

problem, then, is to pin down and describe scientifically the specific factors that determine whether, in a given case, the regressive need satisfactions or the frustrations will predominate. Some of the evidence bearing on this point has already been presented. The aggression shown in some of the autocratic groups points to probable frustration—if the frustration-aggression hypothesis has any weight. Also, the lack of spontaneous work interest in autocracy is a relevant fact. If the boys stopped work when the autocrat left the room, it was an indication that they had not been particularly enjoying it when he was in the room. It meant that the work had become merely a task, rather than something to be done with spontaneous zest and enjoyment. In this section, we shall present additional evidence, and in doing so we shall focus on an aspect of the matter which has not hitherto been emphasized: the fact that much of the discontent which existed was not immediately obvious.

The deceptiveness of autocracy in this respect is a fact that needs more emphasis than it has usually received. For example, out of our six autocratic setups (one in Experiment I, and five in Experiment II), five were in some degree deceptive, insofar as the discontent which existed did not show itself to any appreciable extent in protests to the autocrat himself. The evidence that latent discontent did exist in at least some of the other five autocratic situations can be summarized as follows:

1. Four boys actually dropped out, and all of them did so during those autocratic club periods in which overt rebellion did not occur.

2. Of 20 boys who made direct comparisons between their autocratic and democratic leaders, 19 preferred the democratic leader. These comparisons were, of course, made in private interviews with a third person who was not identified in any way with the leader who was being explicitly or implicitly criticized. It was also noticeable that most of the criticisms that did occur were mild and qualified. Nevertheless, when forced to make a choice, their vote was almost unanimous.

3. Discontent in autocracy was occasionally expressed even during the meetings themselves. In Experiment II, the average number of discontented remarks to other boys was 4.4 per meeting in autocracy (aggressive reaction), 2.1 in autocracy (submissive reaction), 3.1 in laissez-faire, and only 0.8 in democracy. The difference between democracy and the submissive reaction to autocracy is significant at the 1% level. Similar, but not as significant statistically, is the difference in number of expressions of discontent directly to the adult leader. In autocracy (aggressive reaction) these averaged 11.1 per meeting; in autocracy (submissive reaction) the average was 2.9; it was 1.5 in laissez-faire and again only 0.8 in democracy. In this case, the difference between democracy and the submissive reaction to autocracy is significant at only the 10% level.

4. "Release" behavior on the day of transition to a freer atmosphere



suggested the presence of previous frustration. There were three occasions when a group which had shown the submissive reaction to autocracy came out of this somewhat repressive atmosphere into the freer atmosphere of democracy or laissez-faire. In two of these cases, the first day of freedom was marked by an especially large amount of aggressive behavior (much of it, of course, playful in character). The first explanation that suggests itself is that on these days the boys were "blowing off steam"; discontent in autocracy had led to bottled-up tension, and when the lid was off, the tension discharged itself in a more or less explosive way. Actually, the explanation is probably somewhat more complex than this. On the first day of permissive leadership, the boys apparently still had the status needs and self-assertive impulses which were frustrated by autocracy, but they no longer felt any great need to inhibit these impulses. They were in the same general situation so that they were reminded of their former frustration, and yet their new freedom contrasted with the old restraint in such a way as to make itself prominent in the psychological field, as if each boy had said to himself, "Aha! Now I can do what I've been wanting to do in this club!" On later days the thrill of new-found freedom apparently wore off, and, in addition, the spontaneous interest in work which tended to develop in democracy was stronger on later days than it was at first.

### *There Was More Dependence and Less Individuality in Autocracy*

1. In autocracy, more of the boys' behavior was classified as "submissive" or "dependent." In Experiment I, the number of "submissive" actions toward the adult leader was 256 in autocracy and 134 in democracy. In Experiment II, the number of "dependent" remarks to the leader by each boy averaged 14 in the aggressive reaction to autocracy, 16 in the submissive reaction, 4 in laissez-faire, and 6 in democracy. The difference between democracy and either type of autocracy is significant at the 1% level. Some illustrations:

"Is this O.K.?"

Bill starts to hold up his hand for advice. "Mr. Rowe shall I paint the bottom of this or not?"

2. Conversation in autocracy was less varied—more confined to the immediate club situation. In Experiment II, the amount of "out-of-field" conversation was significantly less in the submissive reaction to autocracy than in any of the other three group atmospheres. The figures: democracy 11, laissez-faire 13, aggressive reaction to autocracy 12, and submissive reaction 5. The difference between the last figure and any of the other three is significant at the 1% level. Some illustrations of what was called "out-of-field" conversation:

Bill: "Some day I'm going to get me a job at the glass works."

Van: "I wish I could get a job."

Bill: "You should get out and get a job in the newspaper and then work yourself up. That's what I did." (He sells papers on the corner.) "And maybe some day you'll be able to get a good job."

Big conversation about pussy willows; then about places where the boys had traveled.

Leonard: "I saw your girl's picture in the paper, in the Press Citizen. She's fat, boy."

Reilly: "She's not fat, boy. You probably didn't see her."

Leonard: "She is fat. She's not slender."

No figures are available for Experiment I, but the impression of the experimenter is that the same difference held good there also.

3. In the submissive reaction to autocracy there was an absolute (though not a relative) reduction in individual differences in the various behavior categories. The essential fact here is that the total volume of conversation was significantly lowered in the submissive reaction to autocracy, even though the adult did not tell the boys to "keep still" or directly discouraged sociability in any way. The mean total amount of recorded child-to-child conversation was 298 in laissez-faire, 220 in democracy, 200 in the aggressive reaction to autocracy, and, in the submissive reaction to autocracy, only 126. The difference between this and the figure for democracy is significant at the 1% level. In other words, there was a sort of general subduedness in the atmosphere, the animal spirits of the boys were damped down, and they kept rather soberly at work. With this reduction in total amount, the range of individual differences in amount of "aggressiveness," or "demands for attention," was correspondingly reduced. Whether this absolute reduction in individual differences has any psychological significance, apart from the general reduction of volume with which it coincided, is a question which we prefer to leave open.

### ***There Was More Group-mindedness and More Friendliness in Democracy***

1. The pronoun "I" was used less frequently. One highly objective approach to the problem of group-mindedness is simply to count the number of times that the members of the group use the pronoun *I* (or *me*, or *mine*) in comparison with the number of times that they use the pronoun *we* (or *us*, or *ours*). Which is more frequent, I-centered remarks such as "I want this," or we-centered remarks such as "We need that"? In Experiment I, this appeared to be a very promising index. In the autocratic group the proportion of singular pronouns in the total of all first person pronouns was 82%, and in the democratic group only 61%. In Experi-

ment II, however, although there was some difference in the same direction, it was not statistically significant.

2. Spontaneous subgroups were larger. In Experiment I, a count was made of the frequency of subgroups representing the highest amount of unity possible in a five-person group (5 and 4-1) and the lowest possible amount of unity (2-1-1-1 and 1-1-1-1-1). The high-unity structures occurred 14 times in the autocratic group and 41 times in the democratic group, while the low-unity structures occurred 41 times in the autocratic group and 19 times in the democratic group. This difference is in spite of, rather than because of, the direct influence of the leader; he exerted his influence in the autocratic group much more often in the direction of higher group unity than in the opposite direction. But in autocracy his direct influence was more than balanced by a strong spontaneous tendency to group fragmentation or disintegration. (In Experiment II, this type of data was not obtained.)

3. "Group-minded" remarks were much more frequent. The "We/I ratio" is atomistic insofar as it deals with words out of context. The word *I*, for instance, may be used in the sentence, "I think we'd better pour in the water now." Here it does not indicate egotism or individualistic competition; in its context it is clearly subordinate to a wholly group-minded idea. More significant than the We/I ratio, therefore, is the number of remarks which were classified as "group-minded." This was done only in Experiment II. The results showed that the highest percentage of group-minded remarks was in *laissez-faire*—which is paradoxical, in view of the low amount of effective group cooperation in *laissez-faire*. But an analysis of the actual remarks showed that many of them expressed not the existence of group unity but a *desire* for it:

"Hey, how about us having a meeting?"

"Well, we have to do something."

"Now if we just had a club. . . ."

On the other hand, the contrast between democracy and both forms of autocracy seems to show a genuine difference in effective group-mindedness. The figures are: democracy 18, aggressive reaction to autocracy 7, submissive reaction to autocracy 4. The difference between democracy and each of the others is significant at the 1% level. Some illustrations:

Finn: "I wish that guy [the 'hostile stranger'] would stop telling us stuff and tearing down our work. We won't be able to finish it."

Eddie: "We're going to vote about it."

Finn: "We can't leave it here. It's our last day. We're all in charge of this airplane from now on."

Leonard: "I'll take it home and hang it up."

Reilly: "You won't if the club doesn't say so."

4. "Friendly" remarks were slightly more frequent. In Experiment I, as we have already noted, "friendly ascendance" occurred 24 times in the autocratic group and 34 times in the democratic group. Similarly, "submissive" behavior of one child to another (which might better have been called "agreeable" or "cooperative" behavior in many cases) occurred 120 times in autocracy and 188 times in democracy. The category of "friendly" behavior was not used in the analysis.

In Experiment II, the category of "friendly" was used, and a slight difference was found in favor of democracy as compared with either form of autocracy, but it was not statistically significant. The figures were: democracy 26, submissive reaction to autocracy 17. The difference between democracy and the submissive reaction was significant at only the 5% level, and the difference between democracy and the other two atmospheres does not even reach the 5% level of significance. It should also be noted that the proportion of friendliness in the total of all conversation was actually larger in the submissive reaction to autocracy than it was in democracy.

How can we account for this surprisingly large amount of mutual friendliness in the submissive reaction to autocracy? It seems likely that the unfriendliness which would naturally result from frustration is here counterbalanced by one or both of two factors: the general atmosphere of moral goodness which the presence of the leader seems to have inculcated (the boys were "on their good behavior"), and perhaps also a sort of drawing-together of the group because of the feeling that "we're all in the same boat." The common experience of being subjected to the same frustrating experience may have created a sort of feeling of comradeship similar to that which has often been described as existing in army groups subjected to a common danger and a common discipline. In our experiments this did not result in any responsible type of group cooperativeness ("group-minded" remarks) but it does seem to have resulted in a certain amount of individual friendliness ("friendly" remarks). Many joking and half-joking remarks are included. For instance:

Finn: "Well, so long, I'm going to get my hair cut."

Van: "Look at Finn, he's going to get his head cut off."

"Now, my fine feathered friend, does this suit you O.K.?" (Friendliness to individual in outgroup.) Finn is over near the box, and Rudy (in the other group) holds up the work he is doing in a friendly manner for Finn to see.

Finn: "What is it?"

Rudy: "It's a tin can thing."

5. Mutual praise was more frequent. In Experiment I there were three instances of child-to-child praise in the autocratic group and 16 in the democratic group. In Experiment II praise was not counted as a separate category, but was included in the category of "friendliness." Some instances of its occurrence under democratic leadership



Finn: "Well, nice going, Bill—such an idea. You could take a bit more out of that one." (Bill is Finn's archenemy, but Finn is also changeable, and he is now in the best of spirits.)

Bill (reciprocating, a minute or two later): "Oh, that's good Finn. That's a good idea. Mine's too weak."

Bill: "Oh, Van, that's coming good."

Bill (to Mr. Rankin): "Eddie really did a swell job on that, didn't he? I couldn't do as good as that."

6. Friendly playfulness was more frequent. In number of "play-minded" remarks the figures for Experiment II were: laissez-faire 33, democracy 13, submissive reaction to autocracy 8, and aggressive reaction to autocracy 3. The difference between democracy and the submissive reaction is significant at only the 5% level. Here again autocracy may have brought out a paradoxical type of irresponsible we-mindedness. (Illustrations of "play-mindedness" have already been given in differentiating laissez-faire from democracy.)

7. There was more readiness to share group property. This was shown most conspicuously in Experiment I. At the end of the meeting series, each of the two groups was asked to vote, with individual secret ballot, on the question, "What would you like to have done with the masks?" In the autocratic group (in which each child had already identified with one mask), three out of four gave wholly "individualistic" answers: "Give us our masks," and "Let me have mine." In the democratic group, not one of the five regular members gave a completely individualistic answer.

### Summary

A bird's-eye view of the more important results of Experiment II is given in Figures 40.2 and 40.3, which represent, respectively, the boys' behavior toward their leader and toward each other. The chief differences to be noted here are: (a) the large number of leader-dependent actions in both reactions to autocracy; (b) the large amounts of critical discontent and of aggressive behavior in the aggressive reaction to autocracy; (c) the frequency of "friendly, confiding" conversation and of group-minded suggestions in democracy; and (d) the contrast between democracy and laissez-faire in work-minded conversation.

Here the following differences should be noticed: (a) the large difference between the two reactions to autocracy in amount of aggressive behavior, and the intermediate position of democracy and laissez-faire in this respect; (b) the generally subdued atmosphere in the submissive reaction to autocracy, as shown by the small absolute totals of aggressive behavior, attention demands, group-minded suggestions, out-of-club-field conversa-

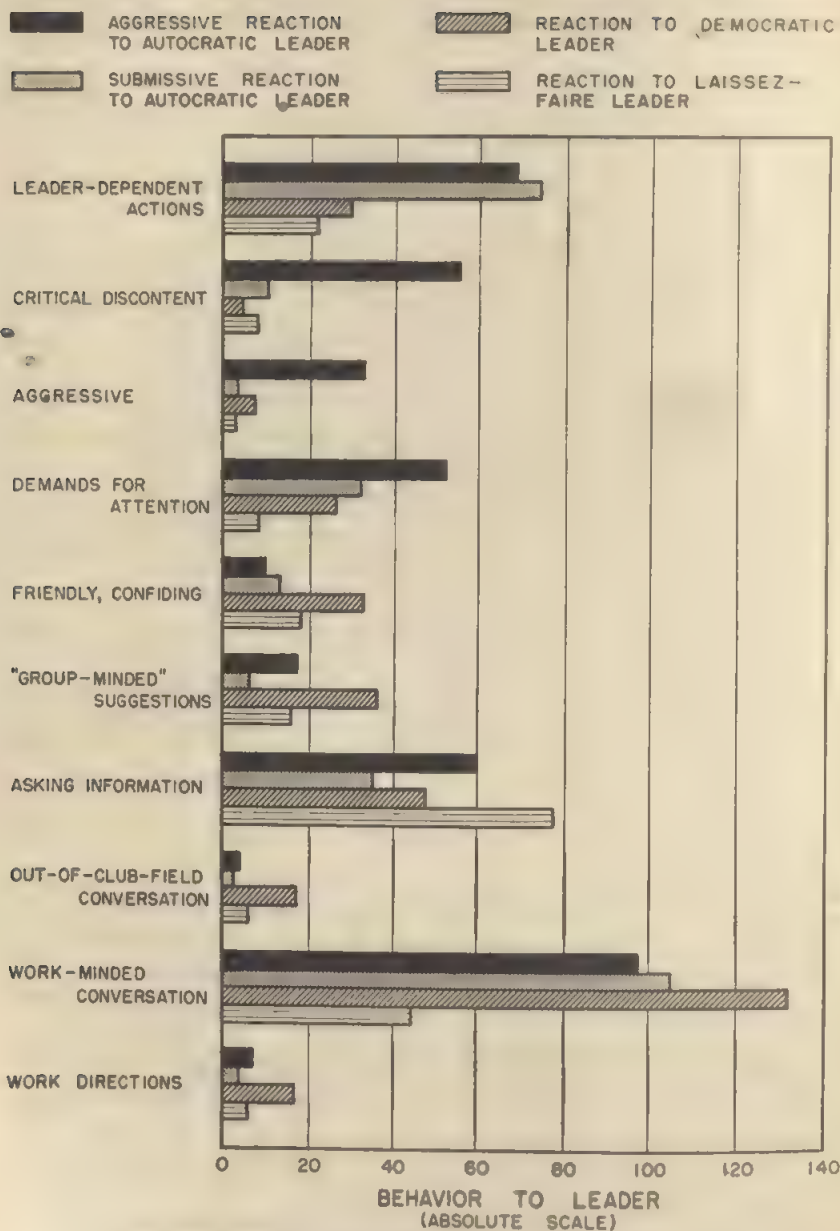


FIG. 40.2. Four patterns of child-to-leader relationship.

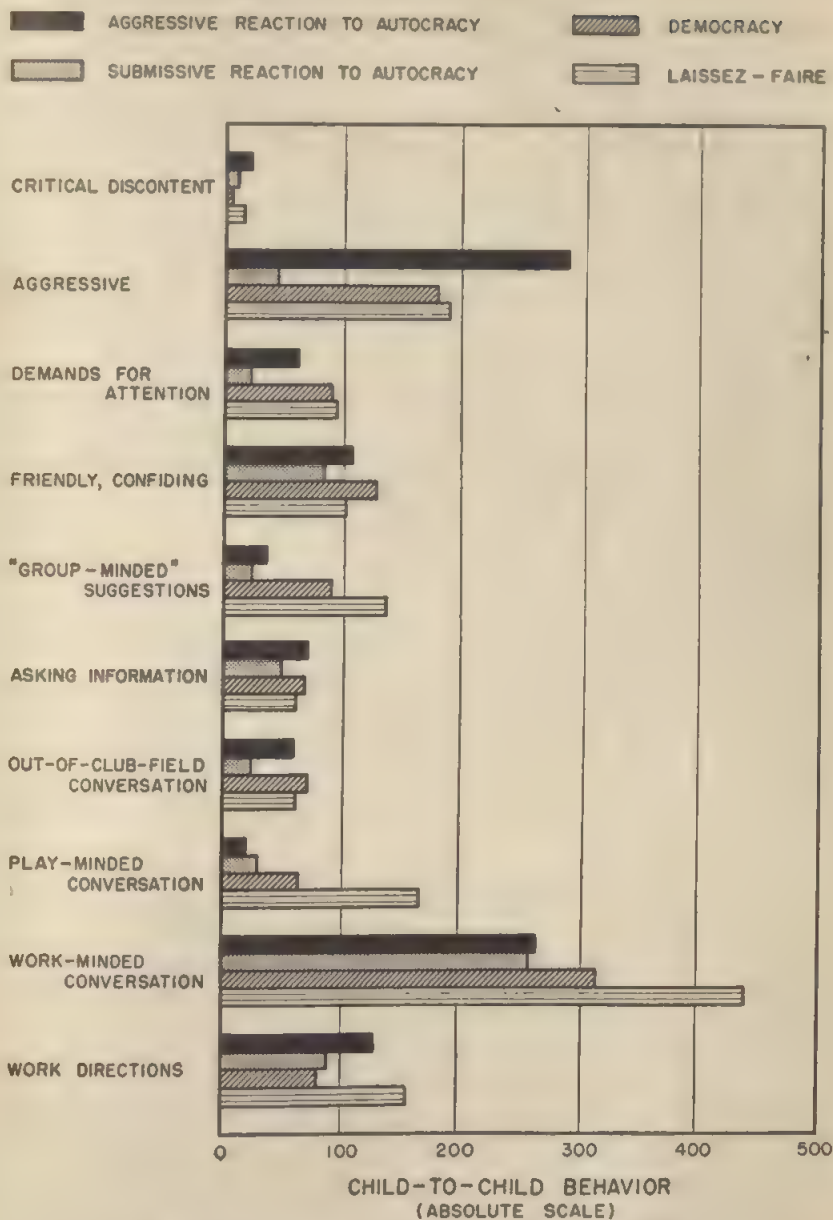


FIG. 40.3. Four patterns of child-to-child relationship.

tion, and play-minded remarks; (c) the small proportion of group-minded suggestions in both reactions to autocracy; and (d) the small amount of play-minded conversation in both reactions to autocracy, and the very large amount in *laissez-faire*.

Summarizing, then, we can say that the above diagram and several other types of evidence tend to support the following descriptive generalizations.

1. *Laissez-faire was not the same as democracy:*

- (a) There was less work done in it, and poorer work.
- (b) It was more characterized by play.
- (c) In interviews, the boys expressed preference for their democratic leader.

2. *Democracy can be efficient:*

- (a) The quantity of work done in autocracy was somewhat greater.
- (b) Work motivation was stronger in democracy as shown, for instance, when the leader left the room.
- (c) Originality was greater in democracy.

3. *Autocracy can create much hostility and aggression, including aggression against scapegoats:*

- (a) In Experiment I, the autocratic group showed more dominating ascendance; much more hostility (in a ratio of 30 to 1); more demands for attention; more destruction of own property; and more scapegoat behavior.
- (b) In Experiment II, one of the four clubs showed a similar reaction.

4. *Autocracy can create discontent that does not appear on the surface:*

- (a) Four boys dropped out, and all of them did so during autocratic club periods in which overt rebellion did not occur.
- (b) Nineteen out of 20 boys preferred their democratic leader.
- (c) There was more discontent expressed in autocracy—even when the general reaction was submissive—than in democracy.
- (d) "Release" behavior on the day of transition to a freer atmosphere suggested the presence of previous frustration.

5. *There was more dependence and less individuality in autocracy:*

- (a) There was more "submissive" or "dependent" behavior.
- (b) Conversation was less varied—more confined to the immediate situation.
- (c) In the submissive reaction to autocracy, there was an absolute (though not relative) reduction in statistical measures of individual differences.



- (d) The observers' impression was that in autocracy there is some loss of individuality.
6. *There was more group-mindedness and more friendliness in democracy:*
- (a) In Experiment I, the pronoun "I" was used relatively less frequently in the democratic group.
  - (b) Spontaneous subgroups were larger.
  - (c) In Experiment II, group-minded remarks were much more frequent in democracy.
  - (d) Friendly remarks were slightly more frequent.
  - (e) In Experiment I, mutual praise was more frequent in the democratic group.
  - (f) In Experiment II, friendly playfulness was more frequent in democracy.
  - (g) In Experiment I, the democratic group showed more readiness to share group property.

## REFERENCES

1. Lippitt, R. An experimental study of the effect of democratic and authoritarian group atmospheres. *University of Iowa Studies in Child Welfare*, 1940, 16, 43-195.
2. Lippitt, R., & White, R. The "social climate" of children's groups. In R. G. Barker, J. Kounin, & H. Wright (Eds.), *Child behavior and development*. New York: McGraw-Hill, 1943. Pp. 485-508.

## Leadership Practices in Relation to Productivity and Morale

Robert L. Kahn and Daniel Katz

In applying the principles discovered in laboratory studies to life situations, there is always the problem of the generality and meaningfulness of the findings. Can the more complex social situation be interpreted adequately in terms of the results of laboratory experiments? Will the use of the generalization from the group experiment be effective in the life situation, where the game is being played for higher stakes, and where people are playing for keeps? The direct study of natural groups and organizations may not necessarily challenge the validity of laboratory research, but it can demonstrate its importance or its triviality.

In a program of research on human relations in group organization, the Survey Research Center of the University of Michigan has attempted a direct attack upon the conditions and causes of worker productivity and worker morale through field studies, surveys and field experiments. In this program, the initial research was not planned around tight mathematical models of the hypothetico-deductive variety but was more empirically oriented, seeking to discover and explore those variables which assumed significant proportions in the industrial situations studied. Nevertheless, the contributions of the Lewinian school, the self-realization notions of Dewey and Rogers, and the realistic analyses of institutional structure by Allport and Mayo and Roethlisberger had a good deal to do with the directions of the research.

Field studies of this sort have the great advantage over laboratory situations of dealing directly with social realities and thus meeting the

This chapter was prepared especially for this volume. The findings and many of the interpretations are taken from several of the major studies in the program of human relations research conducted by the Survey Research Center of the University of Michigan. This program is supported by grants from the Office of Naval Research and the Rockefeller Foundation, and by contracts with the organizations in which the studies were conducted. The studies cited were directed by Gerold Gairin, Eugene Jacobson, Robert L. Kahn, Nathan Maccohy, Floyd C. Mann, Ninex C. Mense, and Donald C. Pritz. The results of these studies are presented more fully in the publications listed following this chapter.

problem of applicability and generalization to social phenomena, provided they can deal with variables at some level of generality. They suffer, however, in comparison to laboratory experiments with respect to control in the identification and manipulation of variables. In the Human Relations Program, therefore, methodological emphasis was placed upon checks and controls in the field studies undertaken. Unquantified anthropological observation was replaced by standardized interviews with carefully defined samples of respondents. Impressionistic accounts of attitude and morale, as in the Hawthorne studies, were replaced with measures of workers' psychological responses. Effects of supervisory practices were not judged on the basis of what management assumed the results to be. Independently derived measures were employed in testing relationships between factors. For example, supervisory behavior was measured independently of its effects upon productivity and morale of workers. Interestingly enough, this is the first time such measurements have ever been taken in an effort to get at the functional relationships in an ongoing organization. Moreover, where productivity was taken as the dependent variable, supervisory practice as the independent variable, and morale as the intervening variable, the groups which were compared were equated on all the technological factors which could affect productivity.

Studies in this program of research have now been conducted in a variety of industrial situations, and in civilian and military agencies. These include the home office of an insurance company, maintenance-of-way section gangs on a railroad, an electric utility, an automotive manufacturer, a tractor company, an appliance manufacturer, and two agencies of the federal government. Some of the major research findings emerging from these projects are summarized in the following pages.

### **Differentiation of Supervisory Role**

The supervisor with the better productive record plays a more differentiated role than the supervisor with the poor productive record; that is, he does not perform the same functions as the rank and file worker, but assumes more of the functions traditionally associated with leadership. Foremen of railroad section gangs, for example, were found to differ with respect to the amount of time they spent in planning the work and performing special skilled tasks (Table 41.1). In general, the foremen with the better production records devoted more time to these aspects of their work, according to their own report. They were also perceived by their men as possessing superior planning ability (Table 41.2). Similarly, in a company manufacturing heavy agricultural and road building equipment, both the foremen and the men of high producing sections evaluated the quality of planning as superior to that of most other groups.

TABLE 41.1

RELATION OF WHAT FOREMAN REPORTS DOING ON THE JOB TO SECTION PRODUCTIVITY  
(Section Gangs on a Railroad)

	SUPERVISORY DUTIES		NON-SUPERVISORY DUTIES			N
	Planning; Skilled Tasks	Providing Materials to Men, Watching Men	Same Things Men Do	Keeping up Track	Number of Duties Men- tioned *	
Foremen of high- producing sections	42	41	8	7	98	36
	83		15			
Foremen of low- producing sections	25	42	15	14	96	36
	67		29			

\* The responses total more than 72 because many foremen gave more than one answer.

TABLE 41.2

RELATION OF MEN'S PERCEPTION OF FOREMAN'S PLANNING ABILITY TO SECTION  
PRODUCTIVITY  
(Section Gangs on a Railroad)

Question: "How good is the foreman at figuring work out ahead of time?"

	Very Good	Pretty Good	So-so and Not Very Good	Not Ascertained	Total	N
Men in high-producing sections	38%	48%	2%	12%	100%	156
Men in low-producing sections	27%	54%	10%	9%	100%	142

Another indication of the ability of the high producing supervisor to differentiate his own function from that of the men is the amount of time which he gives to the work of actual supervision, as contrasted to the time allocated to activities which are not uniquely those of the supervisor. In the studies of clerical workers, railroad workers, and workers in heavy industry, the supervisors with the better production records gave a larger proportion of their time to supervisory functions, especially to the inter-personal aspects of their job. The supervisors of the lower-producing sections were more likely to spend their time in tasks which the men



themselves were performing, or in the paper-work aspects of their jobs (Table 41.3).

TABLE 41.3

RELATION OF TIME SPENT IN SUPERVISION TO SECTION PRODUCTIVITY  
(Sections in an insurance company; section gangs on a railroad; work groups in a tractor factory)

## Questions:

Insurance company—"What proportion of your time is given to supervisory matters? What proportion to other duties?"

Railroad—"How much of your time do you usually spend in supervising, and how much in straight production work?"

Tractor factory—"How much of your time do you usually spend in supervising the men, and how much in other things like planning the work, making out reports, and dealing with people outside your section?"

Section Productivity	50% or More of Time Spent in Supervising	Less than 50% of Time Spent in Supervising	Not Ascer- tained, or Can't Separate Functions	Total	N
Insurance company					
High	75%	17%	8%	100%	12
Low	33	59	8	100	12
Railroad					
High	55	31	14	100	36
Low	25	61	14	100	36
Tractor factory					
97-101%	69	31	0	100	52
91-96%	59	41	0	100	71
86-90%	48	52	0	100	89
80-85%	41	59	0	100	69
50-79%	54	46	0	100	35

The reverse side of this picture was also revealed in the railroad study, in which statements made by the section hands in low-producing sections indicated a tendency for an informal leader to arise in these sections. For example, in the low sections there was more frequently some one member of the group who "spoke up for the men when they wanted something." Apparently the informal organization in the low groups compensated in some respects for the abdication or misdirected leadership of the foremen, but not without some losses in total effectiveness (Table 41.4).

The recognition by the supervisor of the importance of giving more time to his leadership role was also reflected in the morale findings. In the tractor company, for example, the men supervised by foremen who reported spending more than half their time in actual supervision not only had higher production records, but were more satisfied with the

company than the men whose supervisors gave their time primarily to other aspects of the job.

TABLE 41.4

RELATION OF MEN'S PERCEPTION OF A GROUP SPOKESMAN TO SECTION PRODUCTIVITY  
(Section Gangs on a Railroad)

Question: "Is there some one man in the section who speaks up for the men when they want something?"

	Yes	No	Not Ascer- tained *	Total	N
Men in high- producing sections	9%	47%	44%	100%	156
Men in low- producing sections	17%	37%	46%	100%	142

\* Consists primarily of employees of whom this question was not asked.

Moreover, in the same company the men with the highest morale as measured in terms of satisfaction with job, supervisor, and company were those who perceived their supervisors as performing a number of broad, supportive functions. Almost all employees, of high or low morale, reported that their supervisors enforced the rules and kept production up, but the high morale employees also reported that their supervisors performed such other functions as on-the-job training, recommending people for promotion and transfer, and communicating relevant information about the work and the company.

The differentiated role of the supervisor apparently affects the productivity of the group in two ways. The attention given to planning has a direct effect upon output in the coordination and organization of the tasks of the group. This is a type of skill of an engineering or institutional sort, in that the technical know-how of the supervisor is brought to bear upon the ordering of the work of the group on a long range basis. The second way in which the supervisor affects productivity is more indirect. He can increase or decrease the motivation of his employees to produce. These two abilities are not necessarily correlated in the same supervisors. But our evidence indicates that either the engineering skill or the human relations skill can increase the performance of the group. The relative importance of these two factors is determined in good part by the degree of freedom in the situation for the given skill to be effectively manifested. If the company is so tightly organized and so centrally controlled that the tasks of even the smallest work groups are prescribed, then the first-level supervisor with extremely high planning ability will not affect the productive process.

### Closeness of Supervision

A second major dimension which appears to discriminate between high- and low-producing supervisors is the closeness with which they supervise, or the degree to which they delegate authority. Although the high supervisors spend more time performing the supervisory functions, they do not supervise as closely as their low-producing colleagues. This general characteristic is reflected in a number of specific research findings. In the insurance study, low-producing supervisors were found to check up on their employees more frequently, to give them more detailed and more frequent work instructions, and in general to limit their freedom to do the work in their own way (Table 41.5). In the company manufacturing-

TABLE 41.5

RELATION OF CLOSURE OF SUPERVISION OF EMPLOYEES TO SECTION PRODUCTIVITY  
(Sections in an Insurance Company)

	Close Supervision	General Supervision	Not Ascertained	N
Heads of high-producing sections	6	5	1	12
Heads of low-producing sections	11	1	0	12

NOTE: The findings are based upon an over-all code which defines closeness of supervision as the degree to which the supervisor checks up on his employees frequently, gives them detailed and frequent instructions and, in general, limits the employees' freedom to do the work in their own way. This over-all code is derived from the supervisors' discussions of their jobs.

earth-moving equipment, the high-producing workers reported more often that they set their own pace on the job (Table 41.6).

Closeness of supervision is an interesting example of the necessity for distinguishing between the engineering (or institutional) skill of the

TABLE 41.6

RELATION OF MEN'S PERCEPTIONS OF PACE-SETTING FACTORS TO INDIVIDUAL PRODUCTIVITY

(Employees in an Insurance Company)

Question: "What is the most important in setting the pace for your work?"

Employees With Productivity of:	Set Own Pace	Speed of Lane Sets Pace	Speed of Machines, Condition of Tools, Set My Pace	Pressure for Production Sets Pace	Other, Unspecified and Not Ascertained	T	N
100-110%	46%	14%	17%	9%	14%	100%	327
90-99%	38	12	27	12	11	100	762
80-89%	39	11	27	10	13	100	452
70-79%	38	11	27	9	15	100	269
60-69%	37	9	31	7	20	100	275

supervisor and his human relations skill in motivating people. Close supervision often is employed as an institutional device for insuring that workers follow their job assignments correctly and assiduously. But this very practice also has negative morale and motivation implications, and some supervisors may give more freedom to their employees as a way of increasing their motivation. The greater freedom may produce positive results through the satisfaction that the individual has in participation and in self-determination. There is considerable evidence to support this interpretation in the research findings. In the tractor company studied, workers who perceived their foremen as supervising them less closely were better satisfied with their jobs and with the company.

- In the same study, each worker was asked how much he had to say about the way his own job was done, and whether he would like to have more or less to say on this subject. Workers who reported having a lot to say about their own work wanted no less, and were relatively high on the three dimensions of morale—satisfaction with job, supervisor, and company. Workers who reported having little say about how their jobs should be done wanted more autonomy in this area, and were relatively dissatisfied with their jobs, their supervisors, and the company. Apparently, close supervision can interfere with the gratification of some strongly felt needs.

There is a great deal of evidence that this factor of closeness of supervision, which is very important, is by no means determined at the first level of supervision. Rather, the first-level supervisor tends to offer to his men the style of supervision which he experiences with his own supervisor. Or to put it another way, the style of supervision which is characteristic of first-level supervisors reflects in considerable degree the organizational climate which exists at higher levels in the management hierarchy. Among the many findings which bear out this interpretation are the following: In the insurance study the low-producing supervisors reported that they were under closer supervision from above than did the high-producing supervisors (Table 41.7). In the agricultural equipment factory, foremen of high-producing sections indicated relatively more freedom or scope of authority. They stated that they were able to plan their own work as much and as far ahead as they wanted to (Table 41.8). In the railroad study there was a tendency for the foremen of high-producing gangs to report relatively less pressure from above and to be more satisfied with the amount of authority which they had on their job, although these findings were not statistically significant.

There is an additional analysis which bears on the notion that supervisory behavior at the first level is conditioned in great degree by practices of higher management. The general hypothesis was that the relationships between the behavior of first level supervisors and the attitudes of their



TABLE 41.7

RELATION OF CLOSENESS OF SUPERVISION OF SECTION HEAD BY HIS SUPERIOR  
TO SECTION PRODUCTIVITY  
(Section Heads in an Insurance Company)

	Close or Fairly Close Supervision	Fairly General or Quite General Supervision	Not Ascer- tained	N
On high section heads	2	9	1	12
On low section heads	8	4	0	12

NOTE—Closeness of supervision is based on an over-all code, and was defined for coding purposes as the degree to which the section head was given freedom to handle his own problems by his superiors, as compared with the degree to which the superior was directly involved in running the section.

employees are importantly conditioned by the organizational milieu in which the first-level supervisors are functioning, and particularly by the amount of their power or influence in the department—"their potential degree of control over the social environment in which their employees are functioning." In other words, the foreman who is given so little freedom or authority by his supervisors that he is unable to exert a meaning-

TABLE 41.8

RELATION OF FOREMEN'S PERCEPTION OF OPPORTUNITY FOR PLANNING TO SECTION  
PRODUCTIVITY  
(Foremen in a Tractor Factory)

Foreman Question: "Are you able to plan your work ahead as much as you would like?"

Foremen of Sections With Productivity of:	Can Plan Ahead as Much as Needed	Sometimes Have Trouble Planning Far Enough Ahead	Usually Can't or Hardly Ever Can Plan Ahead	Total	N
97-101%	37%	42%	21%	100%	52
91-96%	51	32	17	100	71
86-90%	29	41	30	100	89
80-85%	29	46	25	100	69
50-79%	14	40	46	100	35

ful influence on the environment in which he and his employees function will be ineffective in dealing with employees, regardless of his human relations skills. His intended supportive actions may even have a negative effect on employee attitudes, insofar as they encourage expectations which cannot be met by him. The data from this analysis of supervisors in a public utility in general support the hypothesis. Under high-influence supervisors, 19 of 28 correlations between supervisory practices and

employee attitudes are positive, though small. Under low-influence supervisors, 20 out of 28 are zero or negative.

### Employee-Orientation

A third dimension of supervision which has been demonstrated to be consistently related to productivity is a syndrome of characteristics which can be called "employee-orientation." The employee-oriented supervisor, in contrast to the production-oriented or institution-oriented supervisor, gives major attention to creating employee motivation. The specific ways in which he does this may vary from situation to situation, but they contribute to a supportive personal relationship between himself and his work group members. Thus in the railroad study, the workers in high-producing groups more frequently characterized their foremen as taking a personal interest in them and their off-the-job problems. This finding was repeated in a study in heavy industry, in which the high-producing employees reported that their foremen took a personal interest in them. High-producing foremen also were more likely to say that the men wanted them to take a personal interest in them, whereas the low-producing foremen were more likely to have the perception that the men resented such a demonstration of interest. It is quite possible that this difference in perception is in part cause and in part effect. The low-producing foreman has a less satisfactory relationship with his employees and he may well be right in thinking that they want no more of the kind of relationship which he offers. At the same time, his conviction that they wish to minimize the relationship undoubtedly contributes to the psychological distance between him and the work group.

Even more consistent relationships were found in those behavior areas which not only reflect smooth interpersonal dealings, but also offer tangible evidence of the supportive intentions of the supervisor. Thus, in the railroad study the high-producing foremen were said by their men to be more understanding and less punitive when mistakes were made (Table 41.9). They were also more likely to groom employees for promotion by teaching them new things (Table 41.10).

In the insurance study, the high-producing supervisors were more employee-oriented and less production-oriented than their low-producing colleagues. The low supervisors emphasized production and technical aspects of the job, and tended to think of their employees as "people to get the work done," in contrast to emphasizing training people, taking an interest in employees, and considering them primarily as individual human beings. In the same study, the supervisors were asked the question, "Some people feel the job of supervisor is tough because they stand between the workers and management. Do you feel that this is a problem?"

TABLE 41.9

RELATION OF MEN'S PERCEPTION OF FOREMAN'S REACTION TO BAD JOBS TO SECTION PRODUCTIVITY  
(Section Gangs on a Railroad)

Question: "What does the foreman do when you do a bad job?"

	Foreman Punitive	Foreman Nonpunitive	Not Ascertained	Total	N
Men in high-producing sections	35%	54%	11%	100%	156
Men in low-producing sections	50%	36%	14%	100%	142

The high-producing supervisors were predominantly employee-identified, according to their own report. The low-producing supervisors were, for the most part, management-identified. This general statement was borne out by the supervisors' reactions to two aspects of company policy which at the time of the study constituted problems in morale or employee motivation. In both of these areas, the placement policy and the dining

TABLE 41.10

RELATION OF WAYS FOREMAN TRAINS MEN FOR BETTER JOBS TO SECTION PRODUCTIVITY  
(Section Gangs on a Railroad)

Question: "In what way [does the foreman train men for better jobs]?"

	Teaches Men New Techniques and Duties	Teaches Men Better or Easier Ways of Doing Usual Jobs	Doesn't Train Men	Not Ascer- tained	Total	N
Men in high-producing sections	29%	21%	33%	17%	100%	156
Men in low-producing sections	17%	24%	44%	15%	100%	142

room setup, the high-producing supervisors were more critical and more aware of the situations as sources of employee disaffection than were the low-producing supervisors.

In the study of industrial workers, there was a whole cluster of findings which seems to fit this framework. The employees with highest production records were more likely to report a good over-all relationship with their foreman, in terms of the quality of his supervision, the way they got along with him, and the interest he took in them. In addition, they reported good communications with him; they said that the foreman let

them know how they were doing, that he was easy to talk to, that it usually helped to talk over a problem with him, and that he took care of things right away (Table 41.11). This indicates both a supportive relationship and an effective role in the larger structure. It is perhaps a reflection of the importance of the supervisor's ability to understand and identify himself with the employees that, in this study, the foremen who had previously belonged to a labor organization had better production records than those who had not.

In this study, also, the employee-identification of the higher-producing supervisors was associated with a greater criticism of certain company policies, although at the same time high-producing supervisors were better satisfied with many aspects of their own jobs, and felt that their own superiors were well pleased with their work. But it was the high-producing foremen who in greater numbers felt that their own supervisors were doing less than a very good job, and were no more than fairly good at handling people.

A number of the supervisory characteristics which we have included in the concept of employee-orientation have important effects upon employee satisfaction as well as productivity. This is particularly true for the foreman's giving reasons for forthcoming changes on the job, demonstrating to employees that he holds other aspects of the work situation to be as important as high productivity, and that his concept of reasonable performance is not excessive. In the tractor company, these characteristics were related to job satisfaction, satisfaction with supervision, and satisfaction with the company as a whole.

A related finding appeared when each employee was asked who in the work situation took the greatest interest in him. The workers who felt that the foreman took the greatest interest in them also were getting the greatest psychological return from their employment in terms of satisfaction with job, supervisor, and company.

There is evidence that the quality of employee-orientation, like closeness of supervision, is in part determined by organizational characteristics and is not merely the reflection of personality traits.<sup>1</sup> For example, the tractor foremen who were reported by their men to make a practice of explaining in advance any changes in the job situation said that they were similarly treated by their own supervisors. The replication of supervisory behavior at successive echelons of large organizations is a phenomenon which deserves further study, particularly to reveal the motivational basis for such behavior and the environmental cues on which it depends.

<sup>1</sup> Research findings in this area are reported by Ralph M. Stogdill in "Studies in Naval Leadership: Part II," in Gurtzow, H. (Ed.), *Groups, leadership, and men*. Pittsburgh: Carnegie Press, 1951.



TABLE 41.11

RELATION OF EMPLOYEE PERCEPTIONS OF SUPERVISORY BEHAVIOR TO PRODUCTIVITY  
(Workers in a Tractor Factory)

	EMPLOYEES WITH PRODUCTIVITY OF				
	100-119%	80-89%	70-79%	40-69%	
<i>Over-all relationship with foreman *</i>					
Better than most	24%	21%	17%	16%	14%
About the same as most	71	73	77	76	78
Not as good as most	4	5	5	7	7
Not ascertained	1	1	1	1	1
Total	100%	100%	100%	100%	100%
<i>Foreman interest in employee †</i>					
Great deal or quite a lot	47%	45%	46%	40%	38%
Little or none	50	54	52	59	61
Not ascertained	3	1	2	1	1
Total	100%	100%	100%	100%	100%
<i>Foreman communication to employee ‡</i>					
Always or usually know	59%	60%	54%	49%	55%
A lot of times I don't know or hardly ever know	39	39	45	50	45
Not ascertained	2	1	1	1	0
Total	100%	100%	100%	100%	100%
<i>Foreman accessibility for discussion §</i>					
Easy to talk to about most things	78%	76%	78%	67%	70%
Hard to talk to about many things	22	22	22	33	29
Not ascertained	0	2	0	0	1
Total	100%	100%	100%	100%	100%
<i>Foreman action following discussion   </i>					
Usually or always does some good	54%	47%	47%	38%	44%
Sometimes does some good	30	34	35	40	33
Usually does no good or hardly ever does any good	16	18	16	22	22
Not ascertained	0	1	2	0	1
Total	100%	100%	100%	100%	100%
<i>Foreman promptness in taking action ¶</i>					
Takes care of things right away	55%	52%	51%	43%	52%
Sometimes takes care of things right away, sometimes doesn't	28	30	28	32	27
Lets things go	16	17	20	25	20
Not ascertained	1	1	1	0	1
Total	100%	100%	100%	100%	100%
<i>Number</i>	327	762	452	269	275

\* "On the whole, how would you say you get along with your foreman?"

† "How much interest does your foreman take in you on the job?" (Significant between .05 and .10 level.)

‡ "Does your foreman let you know how you're doing? Do you know where you stand with him?"

§ "If you have a problem, you would like to talk over with your foreman how easy is it to talk to him?"

|| "If you talk over a problem with your foreman, does it do any good?"

¶ "If there is something that needs to be taken care of, will your foreman do it right away or will he let it go?"

(Significant between .05 and .10 level.)

### Group Relationships

The fourth factor which seems to be emerging as a major determinant of productivity in industrial situations involves relationships in the work group. Such a variable was tentatively identified in the insurance study. Employees in the higher-producing groups tended to express a more favorable evaluation of their section (work group) and of their division. This was based on over-all coded ratings of the interview content, and also on specific responses to the question, "How do you think your section compares with other sections in the company in getting a job done?" Several interpretations of this finding are possible. On the one hand it is conceivable that the employees in high-producing groups were simply reporting what they knew to be the objective fact—that their groups had superior work records. However, it is also possible that high involvement in the work group was the cause, and high productivity the effect. Finally, and perhaps most probably, there is the possibility that pride or involvement in the work group and productivity are interacting variables, and that an increase in either one tends to bring about an increase in the other (Table 41.12).

In the railroad study, both the men and the foremen in high-producing groups evaluated their group performances as better than most, even though they had no formal channels of communication through which to learn of the productivity of other groups.

TABLE 41.12

RELATION OF EMPLOYEE EVALUATION OF WORK GROUP TO SECTION PRODUCTIVITY  
(Employees in an Insurance Company)

	High Pride	Medium Pride	Low Pride	Total	N*
Employees in high-producing sections	33%	37%	30%	100%	143
Employees in low-producing sections	10%	41%	49%	100%	142

NOTE: Evaluation of work group is an index score obtained by summing coders' ratings of responses to the following items:

1. "How well do you think your section compares with other sections in the company in getting a job done?"
2. "How well do you think your division compares with other divisions in the company in getting a job done?"
3. An overall coder rating of the respondent's degree of identification with his section, and
4. An overall coder rating of the respondent's degree of identification with his division.

\* There were 66 employees in high sections and 66 in low sections who could not be coded on one or more items of this index.

In the factory manufacturing earth moving equipment, this area was further explored. It was found that high producing employees more often said that their groups were better than most others at putting out work.

They also reported that they felt they were "really a part of their group," in contrast to the lower producers who were more likely to say that they were "included in some ways but not in others," or that they did not really feel that they were members of the group. Moreover, foremen of the higher-producing groups cited their sections as better than most in the way in which their men helped one another out on the job. Foremen of low-producing groups said their sections were not as good as most in this respect. Nor were these responses merely reflecting some general effect for the group (Table 41.13). There was no difference between high and low

TABLE 41.13

RELATION OF EMPLOYEE EVALUATION OF WORK GROUP TO PRODUCTIVITY  
(Workers in a Tractor Factory)

Employee question: "When it comes to putting out work, how does your work group compare to others?"

Employees with Productivity of:	Better Than Most	The Same as Most	Not as Good as Most	Not Ascertained	Total	N
100-119%	33%	63%	2%	2%	100%	327
90-99%	32	65	2	1	100	762
80-89%	28	67	3	2	100	452
70-79%	26	67	7	0	100	269
40-69%	21	67	11	1	100	275

producers in the characteristics they ascribed to their groups in the areas of skill, know-how, education, and the like. All this tends to support the notion of team spirit or cohesiveness in the work group as a factor in productivity.

The relationships in the primary group are also important among the determinants of morale, especially satisfaction with the job and with the larger organization. Workers in the tractor company who reported that they really felt a part of their work group, and that they would prefer their present jobs to identical jobs in other groups, tended to be high in satisfaction with job and company (Table 41.14).

Thus in the area of group relationships, as in others, we find that the twin criteria of productivity and morale have many determinants in common. This suggests again that the effect of supervisory behavior on motivation may be basic to understanding productivity differences. Yet the coexistence of high morale and low productivity, or more frequently, low morale and high productivity, is sufficiently common so that no consistent relationship between productivity and morale has appeared in any of these research studies. One explanation of this discrepancy has already been suggested, namely, that the supervisor can increase productivity in

two fairly independent ways: either through his engineering skill or through his ability to motivate his men. Another major explanation is that productivity can be increased in some instances by company practices involving negative sanctions which affect morale adversely.

TABLE 41.14

RELATION OF GROUP BELONGINGNESS TO PRODUCTIVITY  
(Workers in a Tractor Factory)

Employee question: "Do you feel you are really a part of your work group?" (Significant between .05 and .10 level.)

Employees with Productivity of:	Really a Part	Included in Most Ways	Included in Some Ways	Not Ascertained	Total	N
100-119%	58%	24%	10%	8%	100%	327
90-99%	56	29	10	5	100	762
80-89%	51	31	13	5	100	452
70-79%	52	28	10	10	100	269
40-69%	46	31	15	8	100	275

It is possible also that the lack of a consistently high correlation between morale and productivity in these studies reflects the fact that we are dealing with only one measure of the over-all costs of production, namely, the amount at one point in time. If we were to include the costs of turnover, absence, and scrap loss, the correlation with morale might be higher. For example, in the case of a company with high production at a given point in time because of negative sanctions, the impression of over-all efficiency might change if we also had measures of turnover and quality of product.

### Conclusion

We have considered some research findings which suggest four classes of variables to be consistently related to the productivity of an organizational group and to the psychological returns which the group offers its members. These classes of variables—the supervisor's ability to play a differentiated role, the degree of delegation of authority or closeness of supervision, the quality of supportiveness or employee-orientation, and the amount of group cohesiveness—have been developed from a program of studies conducted in complex, ongoing organizations, the majority of them in business or industry.

In reviewing these research findings, one finds confirmation for much of the recent product of small group experimentation by Lewinian psychologists and others. Lewin's work on the decision making process, the



research of Lippitt and White on leadership climate and style, Bavelas' experiments with on-the-job autonomy in pace-setting, the Harwood project of Coch and French, the communications studies of Festinger and his colleagues—all offer results which are in substantial agreement with the findings reported here. Such agreement is especially significant in the light of the differences between most of the small group studies and the work of the Human Relations Program, in method, theory, and research site.

There is much in the experience of the program, however, which reinforces the ideas with which this chapter was begun—that it is necessary to study complex social situations and organizations directly, as well as to attempt laboratory abstractions of their most significant problems and characteristics. This is true not only because such studies facilitate generalization of research results (if they are not phenotypical relationships), but also because a direct grappling with the live organization tends to orient the researcher toward the most real and significant dimensions of organizational structure and function. The study of living organizations, particularly under conditions of change, suggests serious limitations in attempting to understand organizational change in terms of the primary group alone, and even more drastic difficulties in attempting to induce change by dealing only with the primary group. This wholistic emphasis upon the interrelationships in the total structure is of course consistent with the Lewinian point of view.

Primary work groups exist only in a larger organizational context, and many an unsuccessful industrial training program testifies to the almost insurmountable difficulties of producing change by means which fail to take adequate account of that context. To put it another way, the psychological field is an intervening construct and as such is not directly susceptible to manipulation; the field changes when the social psychological environment changes, and such alterations usually involve broad segments of the organization in addition to the group in which change is proposed. The awareness of industrial employees of these organizational characteristics is great. These results suggest that the full motivation of workers in a complex organizational system can be tapped only when some system of functional representation assures them of an element of control in the larger organization as well as the primary group.

#### REFERENCES

1. Jacobson, E., Kahn, R., Mann, F., & Morse, Nancy C. (Eds.). Human relations research in large organizations. *Journal of Social Issues*, 1951, 7, No. 3.
2. Katz, D., & Kahn, R. L. Human organization and worker motivation. In L. R. Lippitt (Ed.), *Industrial productivity*. Madison, Wisconsin: Industrial Relations Research Association, 1951.

3. Katz, D., Kahn, R. L., Jacobson, E., Morse, Nancy G., & Campbell, A. The Survey Research Center's ONR program. In H. Guetzkow (Ed.), *Groups, leadership and men*. Pittsburgh: Carnegie Press, 1951.
4. Katz, D., & Kahn, R. L. Some recent findings in human relations research in industry. In G. E. Swanson, T. M. Newcomb, & E. I. Hartley (Eds.), *Readings in social psychology*. (Revised) New York: Holt, 1952.
5. Katz, D., Maccoby, N., Gurin, G., & Floor, Lucretia. *Productivity, supervision, and morale among railroad workers*. Ann Arbor, Mich.: Survey Research Center, 1951.
6. Katz, D., Maccoby, N., & Morse, Nancy G. *Productivity, supervision and morale in an office situation. Part I*. Ann Arbor, Mich.: Survey Research Center, 1951.
7. Pelz, D. C. *Power and leadership in the first-line supervisor*. Ann Arbor, Mich.: Survey Research Center, 1951.

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